

**UNIVERSITY OF EDUCATION, WINNEBA**

**AN EXAMINATION OF THE ATTITUDES OF TRADERS  
TOWARDS ENVIRONMENTAL SANITATION AT THE  
HOHOE MARKET IN THE VOLTA REGION**



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**UNIVERSITY OF EDUCATION, WINNEBA**

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**A THESIS IN THE DEPARTMENT OF SOCIAL STUDIES EDUCATION,  
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AWARD OF THE MASTER OF PHILOSOPHY DEGREE**

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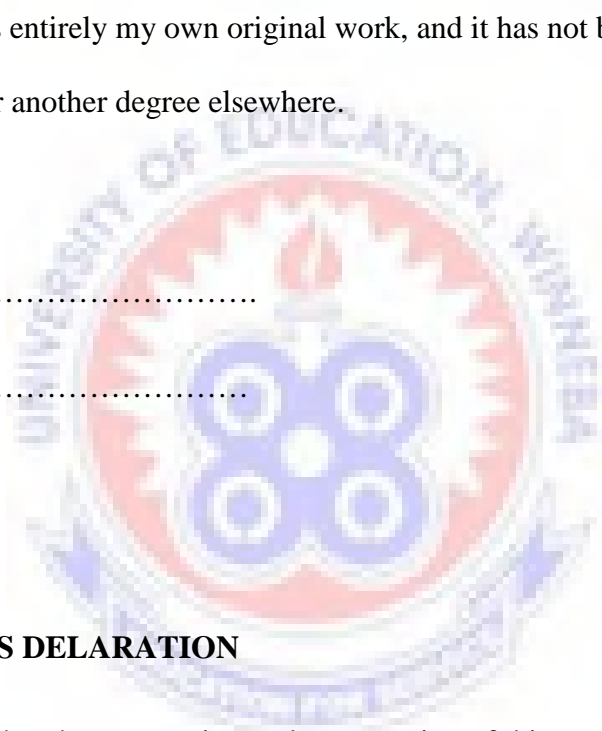
## **DECLARATION**

### **STUDENT'S DECLARATION**

I, Seth Senyo Osafo, declare that this thesis, with the exception of quotations and references contained in published works which have all been identified and fully acknowledged, is entirely my own original work, and it has not been submitted, either in part or whole, for another degree elsewhere.

SIGNATURE.....

DATE.....



### **SUPERVISOR'S DECLARATION**

I hereby declare that the preparation and presentation of this work was supervised in accordance with the guidelines for supervision of thesis as laid down by the University of Education, Winneba.

NAME OF SUPERVISOR.....

SIGNATURE.....

DATE.....

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## **DEDICATION**

I dedicate this work to my wife Regina and my children, Karl, Kelvin, Francis and Francisca. I owe them a debt of gratitude for the love, motivation, support and encouragement they gave me during my research.



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## LIST OF ABBREVIATIONS

ADB	African Development Bank
AMA	Accra Metropolitan Assembly
CSD	Commission on Sustainable Development
DESSAPs	District level Environmental Sanitation Strategies and Action Plans
EHSD	Environmental Health and Sanitation Department
EPA	Environmental Protection Agency
GDP	Gross Domestic Product
GES	Ghana Education Service
GHS	Ghana Health Service
MDG	Millennium Development Goals
MEST	Ministry of Environment Science and Technology
MLGRD	Ministry of Local Government and Rural Development
MMDAs	Municipal and District Assemblies
MOH	Ministry of Health
NEMC	National Environment Management Council
NESPoCC	National Environmental Sanitation Policy Coordinating Council
NGO	Non-Governmental Organization
PNRS	National Policy on Solid Waste
RCRA	Resource Conservation and Recovery Act
UNCED	United Nations Conference on Environment and Development
UNEP	United Nations Environmental Programme
UNICEF	United Nations International Children's Emergency Fund
WEHAB	Water and Sanitation; Energy; Health; Agriculture; and Biodiversity
WHO	World health Organization
WMD	Waste Management Department
WSSCC	Water Supply and Sanitation Collaborative Council
WSSD	World Summit on Sustainable Development

## **ABSTRACT**

Attitude as a component of human behaviour is the pre-requisite for any action, and plays a dominant role in environmental sanitation. Unsustainable urbanization in Ghana has encouraged the increase in economic activities in various markets in urban settlements resulting in negative behaviours of people towards environmental sanitation in these markets. This study examines the attitudes of traders towards environmental sanitation at the Hohoe main market. It describes the general sanitation situations in the market, which include the facilities in the market, waste creation and waste disposal at the market. The attitudes of the traders towards sanitation in the market is also examined. Qualitative case study was used and the methods used in data collection included semi-structured in-depth interviews and observation. The key findings include: the attitudes of traders towards general sanitation in the Hohoe market were positive; traders were not satisfied with the management of waste in the market as a result of the Municipal Assembly's lack of capacity in terms of financial, logistical and human resources to deal with the situation; and the Assembly has failed to enforce its bye-laws on sanitation making traders to litter and trade in filthy environment with impunity. Based on these findings, it has been suggested that the Assembly prioritizes the management of waste in the market through the provision of finance, logistics and personnel. It must also promote strict enforcement of the sanitation bye-laws through collaboration with the Ghana Police Service.

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.0 Background to the Study**

Ghana is a developing country undergoing rapid urbanization with agriculture as the main stay of the economy. Both small-scale peasant farmers and commercial farmers produce food to feed the citizenry. With open space petty- trading as the main avenue for the marketing of food products. This has led to the development of numerous open space markets in the country.

The market is one of the many varieties of systems, institutions, procedures, social relations and infrastructure whereby parties engage in exchange. While parties may exchange goods and services by barter, most markets rely on sellers offering their goods or services in exchange for money from buyers. Markets vary in form, scale (volume and geographic reach), location, and types of participants, as well as the types of goods and services traded.

According to Business Dictionary (1998), a market is an actual or nominal place where forces of demand and supply operate, and where buyers and sellers interact (directly or through intermediaries) to trade goods, services, or contracts or instruments, for money or barter. Markets include mechanisms or means for (1) determining price of the traded item, (2) communicating the price information, (3) facilitating deals and transactions, and (4) effecting distribution.

Market centres are spread all over the country. Some of these markets are geographically large and well patronized by both sellers and buyers on daily basis; some examples of these markets are Agbogbloshie, Mallam Atta, Adabraka and Makola Number One, all in Accra and Kejetia and Adum in Kumasi. These are just a

few of such markets found across the country. These markets are designed to include stalls, shops of different sizes and in some cases offices for some public and private institutions such as financial and insurance institutions. It therefore means that one can transact his or her daily business by just visiting a market.

Other types of big markets are those that are geographically small but very busy with commercial activities on periodic market days. Examples of such periodic markets in Ghana are; Agomanya, Asamankese and Nkrakan markets in the Eastern Region. In the Volta Region of Ghana, period markets include Logba, Kpeve and Hohoe (where the study took place). Unlike markets in the major cities which operate on daily basis, the periodic markets operate on specific days in the week and are well patronized with traders coming from various parts of the country including Accra and Kumasi to trade. However, they become dormant on non- market days especially that of Kpeve and Logba which have no shops and therefore become empty until the next market day. The other type of market may be described as small based on the geographical size and the extent to which traders patronize it. Unlike markets in other countries across the planet, Ghanaian markets are unique. Their uniqueness lies in the fact that one would hardly find a market that trades in one particular group of wares.

Markets are very important economic assets to the country but governments and local authorities generally have a poor appreciation of the importance of markets and a reluctance to invest in them. As a consequence markets are often congested, unhygienic and inefficient. They are also fire risks. Local authorities frequently see markets as revenue raising opportunities, not as institutions that necessitate investment. Although there have been significant developments with regard to supermarket development and the improvement of farm-to-agro processor linkages,

the great bulk of food products are still distributed through more traditional channels using traditional market infrastructure.

Trading and other economic activities had already advanced before the colonial masters took over administration of the Gold Coast in 1874 (Odotei, 1995). Like many African countries, the main method of trading was through the barter system; people used to exchange goods and services for commodities and services that were believed to measure up to what was being offered. As trade became more liberalized, people used to trade their goods and services for cowries. This system of trade continued until we started using currency (British Pound and now Ghana Cedi) to trade. As a developing country, majority of Ghanaians are used to trading in open or enclosed places called market instead of supermarkets, which are more or less foreign to the Ghanaian way of trade and also more expensive for the ordinary Ghanaian to patronize.

While cities in the developed countries have generally developed their markets into first class supermarkets taking into consideration spacious facilities, environmental sanitation and other safety measures, cities in developing countries such as Ghana are still grappling with overcrowding, poor safety measures and more seriously, poor sanitation in their markets. In an online news report titled *Markets in Central, Western Regions face sanitation challenges*: This is how it was reported by Ghana News Agency:

One key challenge facing many markets in Ghana is the improper disposal of refuse, particularly solid waste disposal, and there have been calls for urgent action to solve the problem. Major markets like the market circle in Takoradi and the Essaman market in the Central Region are two major markets battling sanitation problems. Mr. James Cobbinah, Chairman of the Essaman Market

Association said in a statement after a meeting with the leadership of the two markets that the stench emanating from the two markets was unbearable. (GNA, 2013).

Today, market centres in both urban and rural areas have come under sanitation pressure, questioning their ability to enhance environmental protection, health security and poverty reduction. Most markets in Ghanaian cities are characterized by unsanitary conditions, including poor water supply and poor drainage systems, unsanitary waste disposal and overcrowding, resulting in poor personal and environmental hygiene. The sanitation situation is so appalling that your stomach will begin to growl upon arrival at a market in an urban community in Ghana. It is no longer in doubt that our markets are inundated with the challenges of un-cleared solid waste. The deplorable state of environmental sanitation in some urban markets in Ghana is lamentable. In this connection, one questions the extent to which the goals of attaining environmental sustainability, good health and poverty reduction can be achieved if sanitation situations in our markets continue to deteriorate. As reported by Naa Lamiley Bentil:

Traders at Agbogbloshie, one of the biggest markets in the Accra metropolis, have again turned the market and its surroundings into a filthy and disorderly spot, just nine months after the Accra Metropolitan Assembly (AMA) had spent an estimated ₵5 billion to clear and clean the market of all illegal structures and unsanitary conditions. (Bentil, 2007:1).

Despite repeated reportage about the sanitation conditions at the Agbogbloshie market in Accra, not much has been done to improve conditions there. This was how it was reported by “e.tv”:

Authorities at the market say they are putting in efforts to clear the filth and need the support of government. Today Agbogbloshie is one of Accra’s



biggest foodstuff markets. Its location makes it accessible to people in various parts of Accra. Customers prefer to shop here because of cheap prices of foodstuff and other items. The contamination of food with bacteria makes food poisoning a possibility and some of the vegetables lose their state of freshness and nutritional value as a result of the way they are handled. Appropriate storage facilities are non-existent as frozen chicken and meat are displayed in the open at the mercy of flies. Despite efforts being made by Zoomlion, a private waste management firm, to improve the sanitation conditions at the market, it still remains filthy especially with choked gutters making efforts to improve the sanitation conditions here impossible. (e.tv report).

The poor environmental sanitation problem can also be attributed to poor planning of our markets. Majority of Ghanaian markets are without toilet facilities, proper waste dump sites, and gutters and in some cases, narrow walkways which make pedestrian movement almost impossible. The markets are so congested. This is how Bannerman reported the general attitudes of Ghanaians towards planning in the “Herald” newspaper posted on Ghana web:

I believe that incompetence, a lack of planning and absence of a maintenance culture significantly account for this daunting problem. You see, Ghana is a place where we order expensive generators but have no place to locate them. We draw up a health insurance scheme but have no way of retaining our doctors. We watch our population explode but we have no plans to deal with waste in general. Waste by the way, correlates positively with population growth. The more the people, the more waste to expect. Accra for example, cannot wean itself from dumping disgusting human waste into the never tiring shining sea. Ghana is a place where we continue to put up houses without worrying about zoning laws, parking requirements, sanitary requirements and many more. We are importing thousands of cars without road enhancements and urban planning to sustain such. The government

collects huge sums for car imports but refuses to invest in our transportation infrastructure. In a nutshell, if you don't plan then you plan to fail. It is that simple my friends. (Bannerman 8th April, 2013: 1).

The poor state of sanitation in Ghanaian markets compelled traders to complain to the late President, Atta Mills, when he visited Maamobi, Mallam and Nima markets on the 28<sup>th</sup> of April, 2012. According to Bannerman (28<sup>th</sup> April, 2013), some of the problems they were facing in the markets which they outlined were congestions, poor sanitation, very old structures and poor drainage. All these problems in the markets are recipe for the outbreak of cholera and diarrhoea among traders and customers over the years.

Given that sanitation and health have reciprocal effects on each other and the poor rate conditions in our markets is already high, what prospect is there for health security, economic growth and development? Will poor sanitation in our markets serve as precursor to poor health and underdevelopment? How do traders and other actors' attitudes contribute to environmental sanitation in our markets? How can we, as a nation, achieve the Millennium Development Goals (MDGs)? If the MDG sanitation target is to be achieved, innovative approaches need to be developed to reduce the time span from policymaking to services delivery. The global statistics on sanitation hide the dire situation in some developing regions. With an average coverage in developing regions of 50%, only one out of two people has access to some sort of improved sanitation facility United Nations (1998).

Attitudes adopted to meet daily environmental sanitation may vary from individual traders and other actors depending on their resource endowments and awareness. This study seeks to contribute to the understanding of traders and other actors'

attitudes towards environmental sanitation in markets centres in the face of the current poor environmental sanitation that has engulfed various market centres in the country.

The study area is Hohoe, the Municipal capital of the Hohoe Municipality in the Volta Region. Hohoe became a district in 1979. The population of Hohoe Municipality is 167,016, comprising 79,969 (48%) men and 89,049 (52%) women (2010 National Population and Housing Census). Hohoe is located around the central part of the Volta Region with population of about 56,202. Majority of the people in the Municipality (about 65%) are engaged in agricultural production (Hohoe Municipal Assembly Report, 2006). Hohoe Municipality is the hub of tourism in the Volta Region having the most impressive and highest waterfall (Agumatsa Falls) in Ghana. Other tourist sites are the Afadza Mountain, located on the Akwapim Range, Tagbo Falls and the caves at Likpe Todome.

Hohoe is strategically situated at central part of the Volta Region that it attracts people from every part of Ghana including citizens from other parts of West Africa to settle there and undertake commercial activities. There are also some public and private employees working in various sectors. The people of Hohoe are known as the Gbi's and their indigenous dialect is Ewe, however, Twi is also widely spoken by some settlers in the town. Various traders including middlemen and women and producers themselves (especially farmers) come to the market to trade thereby swelling up the already overcrowding situation in the market. The economic activities of these traders, although very important, are accompanied with a lot of environmental problems including poor sanitation. Diverse ethnic group means different beliefs and practices as well as attitudes towards environmental sanitation.

Hohoe is blessed with a lot of educational institutions from the basic school level to the university level. There are a number of private and public basic schools, one public secondary and one commercial school each, two colleges of education and a newly established university. This is an evidence of how serious the people of Hohoe embrace the importance of education.

As earlier stated, most markets in our cities and towns including Hohoe are facing problems of environmental sanitation which may be affecting the health of the people. The site of poor sanitation at the Hohoe market is of serious concern to anybody who is environmentally conscious. This therefore raises serious concern because this is where we buy our foodstuffs and therefore run the risk of consuming contaminated food which may lead to the outbreak of an epidemic if the issue of poor sanitation is not tackled at the market.

### **1.1 Statement of the Problem**

The problem under investigation in this study is the general feelings of traders towards poor environmental sanitation in Ghanaian markets. The problem of waste in urban city markets in Ghana can be better understood in the light of recent rapid urbanization the country is experiencing. The concentration of population and businesses in the urban cities is accompanied by the development of market centres which have exceeded their carrying capacities leading to rapid increase in the volume of both liquid and solid wastes generated from consumption activities that go on in the markets. Against this situation of mounting waste production in the markets, district and municipal assemblies in the country seem unable to organise adequate collection strategies. As a result, urban city markets in the country are saddled with a worsening poor environmental sanitation situation which proves to be intractable and threatens public health.

There is growing understanding among researchers that the useful lessons with wider policy implications on environmental sanitation, health security and poverty reduction can be drawn from the attitudes or behavioural patterns of people themselves (Schultz, 2002). Investigating the array of traders and other actors is thought to provide valuable insights for policy planning. However, knowledge on traders' attitudes towards environmental sanitation in Ghana to rising poor sanitation challenges is scanty. In particular, research work on environmental sanitation in market centres and the factors influencing traders' attitudes towards environmental sanitation is limited. There is the need to study traders' attitudes towards environmental sanitation in market centres. There is no adequate information on the attitudes of traders towards environmental sanitation in Ghanaian market centres. This study was therefore undertaken in order to gain understanding of the attitudes of traders towards environmental sanitation at the Hohoe main market in the Volta Region.

## **1.2. Purpose of the research**

Several efforts have been made by the Hohoe Municipal Assembly to ensure that the market is always clean by engaging the services of a private waste management company. However, the behaviours and attitudes of the traders do not augment these efforts. It was against this backdrop that the study set out to describe how traders feel about the poor environmental sanitation at the Hohoe market, one of the major markets in the Volta Region. In other words, this research was an attempt to answer the question, 'do traders feel comfortable selling in filth in the market?'

### **1.3 Research Objectives**

The study sought to:

- Ascertain the level of traders' awareness of environmental sanitation issues at the Hohoe main market;
- Describe the attitudes of traders towards environmental sanitation at the market;
- Identify the factors that influence traders' attitudes towards waste disposal at the market;
- Examine the waste management strategies in the Hohoe market.

### **1.4 Research Questions**

The study sets out to find answers to the following question:

- To what extent are traders aware of the state of environmental sanitation at the Hohoe market?
- What are the attitudes of traders towards environmental sanitation at the market?
- What are the factors that influence traders' attitudes towards waste disposal at the market?
- What waste management strategies are put in place at the Hohoe market?

### **1.5 Scope of the study**

The scope of the study was limited to the main Hohoe market. The research was focused on the factors that contributed to the current condition and the extent to which poor environmental sanitation situation was being tackled at the Hohoe market. The study also looked at the way traders at the market feel about the poor sanitation at the market and measures that could be taken to improve sanitation in the market.

## **1.6 Significance of the Study**

The worsening environmental sanitation situation in Ghanaian markets has attracted attention among the populace. The situation has assumed a serious gigantic proportion and this threatens the very existence of human society. As a result of its serious health implications, it is receiving a lot of media attention shown by the featuring of waste disposal issues in the newspapers, television and radio discussions. It is, therefore, obvious that the poor sanitation situation in Ghanaian urban markets requires research attention to shed more light on the issue and pave way for a solution.

In this regard, the media seem to be drawing attention to the poor sanitation situation in the urban city markets in the country. The health impact of poor environmental sanitation in urban city markets could lead to financial and economic cost including direct medical costs associated with treating sanitation related illnesses and lost income through reduced or lost productivity and government cost of providing health services. According to UNICEF, 2008 (cited in Acheampong, 2010), a World Bank country environmental analysis conducted in Ghana showed that health cost resulting from poor water, sanitation and hygiene is equivalent to 2.1% of Annual Gross Domestic Product (GDP). Clean and healthy environment attracts both local and foreign investment and trade thereby reducing unemployment.

As a typical developing country, Ghana also has a serious environmental sanitation problem in the urban city markets. In this regard, the media seems to be playing a pioneering role in drawing attention to the poor waste disposal practices of Ghanaians and the worsening environmental conditions that result from the practice. Academic research in the area include an MSc thesis (Anomanyo, 2004) submitted to Lund University in 2004 which considered the possibility of using 'bioreactor treatment

technology’ as an integral part of the waste management process in the country; a PhD thesis by Baabereyir (2009) submitted to University of Nottingham which examined the social and environmental injustice in solid waste management in Accra and Sekondi-Takoradi and an undergraduate long essay by Freduah (2007), submitted to the University of Ghana, which examined the problems of solid waste management in Nima, one of the slum communities in Accra. Apart from these, there are a number of studies that have investigated issues related to the urban solid waste problem in Ghana including (2011) article titled “*Ghana; cholera and unhygienic environment work hand in hand*” by Helena Selby; Raymond Awiagah’s article in the “Today Newspaper” title “*Accra markets in deplorable conditions*” and an article posted on Ghana Web by Nii Lantey-Okunka title ‘*Feces takeover Accra markets*”.

The above mentioned studies have examined a wide range of environmental issues including sanitation, water use and pollution, the disease burdens associated with poor environmental conditions and the effects of waste disposal and other human activities on natural resource management, topics that are somewhat related to the urban solid waste problem. However, none of these studies has investigated the issue of people’s attitudes towards poor environmental sanitation in market centres in sufficient detail to create adequate understanding of the problem even though it remains one of the most visible and nerve-racking problems in the urban cities. Thus, the poor sanitation situation in Ghanaian urban markets remains under-researched and hence poorly understood. This situation creates a knowledge gap and makes it difficult to find solutions to the worsening environmental sanitation situations in market centres. In view of the above, this study can be justified on the grounds that it will further bring understanding of the attitudes of traders towards sanitation in markets which is a



problem affecting Ghanaian urban markets and provide a useful starting point for addressing an otherwise intractable problem.

The study would serve as a major input to the Municipal Assembly and agencies concerned with managing environmental sanitation in the Hohoe Municipality in designing interventions for the Hohoe market. It will provide further understanding of the poor environmental sanitation situation in urban city markets in general and the main Hohoe market in particular. The study will also provide information which can serve as a basis for further research into similar problems.

### **1.7. Delimitation of the study**

The study was limited to the attitudes of traders towards poor environmental sanitation at the Hohoe market. The research area attracted the researcher because whatever food we consumer, whether raw, cooked, dried or smoked, should be sold under hygienic conditions. But looking at the problem of waste (both solid and liquid) disposal situations in the market, one would not doubt the extent to which consumer goods are contaminated before they are sold to the public. The implications of consuming unhygienic food and also there will be reduction in productivity as a result of the people falling sick. In view of the above, it is prudent to undertake this study for people especially traders to appreciate the worsening sanitation situation in the urban city markets and start thinking of providing solutions to the problem.

### **1.8. Organization of the study Report**

The thesis report has been divided into six chapters. Chapter one presents a general introduction and discussion of the background of environmental sanitation in Ghanaian urban markets, the statement of the problem, purpose of the study, objectives of the study and research questions. The rest are scope of the study,

significance of the study, limitations encountered during the study, delimitations and organization of the study.

Chapter two is devoted to the framework on which the study is conceptualized. Key concepts employed in the study are defined in this chapter. The chapter also presents a review of the literature from which the findings were analyzed in the context of the significance of the concepts that were employed.

Chapter three presents the detailed research approach and the methods that were adopted for the data collection and analysis. A qualitative approach involving semi-structured interviews and observations were the main methods of collecting data, which were effective for promoting discussion of personal and often sensitive topics. Also discussed in chapter three is the population of the study, sample technique procedure and my approach to data analysis.

Chapter four covers qualitative data analysis and interpretation of results. Analysis of the data collected was described having used the semi-structured interview in gaining the solicitation of verbal data. The findings of the collected data were transcribed in an effort to learn about participants' attitudes towards environmental sanitation.

Chapter five discusses the findings of the research in line with the objectives that guided the entire study. The final chapter, which is chapter six, covers the summary of major findings and the findings have contributed to knowledge. The chapter also draws conclusions on the major findings of the study and outlines areas for further research.

## CHAPTER TWO

### REVIEW OF RELATED LITERATURE

#### 2.0 Introduction

The research work is aimed solely at examining the attitudes of traders towards environmental sanitation at a market place. This is indispensable to economic growth and development of any nation that wants to achieve the Millennium Development Goals (MDG). Neglect of sanitation exposes people to unhygienic conditions which leads to dangerous diseases especially diarrhoea (UNCED, 1999). Bearing this in mind, this chapter examines and analyses attitudinal formation issues based on theoretical framework for the study.

#### 2.1. Environmental Sanitation

According to Barrow (1995; cited in Adedokun 2015:1), environment is the sum total of conditions within which organisms live. Curringham and Saigo (1999) also corroborated Barrow when they defined environment as the circumstances and conditions that surround an organism or group of organisms. They further defined environment as the social and cultural conditions that affect an individual or community.

Schaefer and Stephens (cited in Acheampong, 2010:12) say that “the environment includes not only the physical and biological elements of nature, but also human-based systems - cultural, economic, political, technological, spiritual and relational- that make up the setting in which people live”.

The environment includes both abiotic and biotic factors that have influence on an organism. The components of the environment, which are also the resources that man

depends on for survival, are air, water and land. These components influence the organisms that are found in that particular environment. Organisms respond to changes in their environment by evolutionary adaptations in form and behaviour. Disruption in such systems, which is as a result of cumulative indiscriminate degradation which takes place in localized environments such as villages, towns and cities, distort the delicate ecological balance and have dire consequences for mankind, and thus provide a compelling justification for the preservation of the environment.

Much has been written about sanitation problems yet the definition of the term sanitation is quite rare in scholarly literature on the topic. Definitions of 'sanitation' are rather commonly found in documents such as dictionaries, encyclopedias technical reports of governments and organizations. For example, *Wikipedia Encyclopedia* defines sanitation as the hygienic means of promoting health through prevention of human contact with the hazards of wastes as well as the treatment and proper disposal of sewage wastewater.

Nyamwaya (1994; cited in Oladimeji, Annune & Ebele, 2011) supports this notion by defining sanitation as the proper disposal of human waste that is feces and urine. He further states that it includes keeping the human environment free of harmful substances which can cause diseases. Mensah (2002: cited in Oladimeji *et al.* 2011) also lends his support to this definition by stating that sanitation is the state of cleanliness of a place, community or people particularly relating to those aspects of human health including the quality of life determined by physical, biological, social and psychological factors in the environment.

Schertenleib, Forster and Belevi (2002:1-2), also define sanitation as interventions to reduce people's exposure to diseases by providing a clean environment in which to live and with measures to break the cycle of disease. This usually includes hygienic management of human and animal excreta, refuse and wastewater, the control of disease vectors and the provision of washing facilities for personal and domestic hygiene. It also involves both behaviours and facilities which work together to form a hygienic environment (World Bank, 2002).

The World Health Organization (WHO, 2006) states that sanitation generally refers to the provision of facilities and services for the safe disposal of human urine and feces. Inadequate sanitation is a major cause of disease world-wide and improving sanitation is known to have a significant beneficial impact on health both in households and across communities. The word 'sanitation' also refers to the maintenance of hygienic conditions, through services such as garbage collection and wastewater disposal.

Drawing from the views expressed above, sanitation could be viewed as a concept explaining activities to ensure safe disposal of excreta, solid waste, and other liquid waste and the prevention of disease vectors to ensure a hygienic environment. The definition of sanitation to be used in this study is proper disposal of liquid (waste water) and solid waste. It involves keeping the human environment free from disease causing vectors through the proper disposal of market wastes (solid and liquid).

Environmental sanitation refers to activities aimed at improving or maintaining the standard of basic environmental conditions affecting the well-being of people. The World Health Organization (WHO 2006) defines environmental health as “the control of all those factors in man's physical environment which exercise or may exercise a deleterious effect on his physical development, health and survival”.

Environmental sanitation aims at improving the quality of life of the individuals and contributing to social development. Water Supply and Sanitation Collaborative Council (WSSCC, 2010) has defined environmental sanitation as “Interventions to reduce people’s exposure to disease by providing a clean environment in which to live, with measures to break the cycle of disease” (cited in Simpson-Hebert and Woods, 1998). This according to Schertenleib et al. (2002:2) usually includes disposal or hygienic management of liquid and solid human waste, control of disease vectors and provision of washing facilities for personal and domestic hygiene. Environmental sanitation comprises both a change in behaviour and facilities to form a hygienic environment.

According to the Ministry of Local Government and Rural Development (MLGRD) (cited in Acheampong, 2010:13), environmental sanitation refers to efforts or activities aimed at developing and maintaining a clean, safe and pleasant physical environment in all human settlements. It comprises a number of activities, including the construction and maintenance of sanitary infrastructure, the provision of services, public education, community and individual action, regulation and legislation. Environmental sanitation therefore involves controlling the aspects of waste that may lead to the transmission of diseases. According to the International Water and Sanitation Centre, the term ‘environmental sanitation’ is used to cover a wide concept of controlling all the factors in the physical environment which may have an impact on human health and well-being (cited in Acheampong, 2010:14). Environmental sanitation is very vital for any nation and in order to live in a world free from diseases, we must task ourselves in a more collaborative and more sustained ways to frequently embark on general cleaning exercises in our houses, homes, markets and the entire communities.

It involves limiting environmental contributors to the spread of disease, commercial food safety in facilities like restaurants, markets and farms. By doing so, the hope is that living conditions will improve and health problems will decrease. The management of water, solid waste, and industrial waste, as well as the topic of pollution and noise control all fall under the umbrella of environmental sanitation.

## **2.2. Environmental Sanitation Awareness**

In the past two decades, environment has attracted the attention of decision makers, scientists and even laymen in many part of the world Sengupta, Das and Maji (2010). They are becoming increasingly conscious of issues such as famines, droughts, floods, scarcity of fuel, firewood and fodder and pollution of air and water. People are now aware of the need to protect the natural environmental resources of air, water, soil and plant life that constitute the natural capital on which man depends.

Environmental awareness, according to Sengupta, Das and Maji (2010) does not only imply knowledge about environment but also attitude, values and necessary skills to solve environment related problems. They went on to say that environmental awareness is the initial step ultimately leading to the ability to carry on responsible citizenship behaviour. This assertion is supported by August (2011), who says that the aim of environmental awareness is to make people from all walks of life of specific issues related to their surroundings, including living and non-living elements, example, land, soil, plants, animals, air, water and other humans, as well as awareness of their built, social and economic surroundings, and the impacts of our actions on these.

According to the United Nations Environmental Programme (UNEP, 2012), environmental public awareness is shaped throughout the whole life of particular people living in a given local community and performing specific work and having

definite personal characteristics which have a deciding effect on their sense of responsibility and ability to emotionally perceive the environment as having value in itself. The knowledge acquired during school education and then systematically improved in adulthood, is an essential factor in heightening the environmental awareness of an individual and, at the same time, an indispensable condition for the development of a pro-ecological lifestyle.

Partanen-Hertell *et al* (1999, cited in Olgyaiova, Pongracz, Mikkola, Radoslav & Keiski 2005) also define environmental awareness as a combination of motivation, knowledge and skills. According to them, when the environmental awareness of an individual is combined with external stimulating physical and practical conditions, the result can be desired and will make environmentally friendly choices. Environmental awareness starts to develop when people notice that unfavourable, threatening changes in the surroundings emerge, and the effect of this cannot be corrected easily. The realization that environmental damages need a long time to recover stimulates the arising environmental awareness further (Partanen-Hertell *et al.* 1999, cited in Olgyaiova *et al.* 2005). According to Olgyaiova *et al* (2005), Partanen-Hertell *et al* developed four stages of environmental awareness. They are as follows:

(1). In the first stage, motivation for the level of knowledge and skills is usually based on growing concern over health threats. At this stage, people and organisations do not see themselves as active actors in the process of improving the environment even though they think it should be improved;

(2) In the second stage, basic environmental legislation and administrative structures are functioning in the society and the foundations of environmental monitoring system have been created but the separate environmental protection measures do not support



each other to have a positive synergy. The activities to raise environmental awareness, according to them, are targeted to the whole society, starting from the groups that influenced the state of the environment the most;

(3) In the third stage, motivation, knowledge and skills are in a growing synergy when increasing environmental awareness. In this situation, environmental matters become part of professional and public awareness with the aim of integrating environmental awareness as an inseparable part of general awareness of an individual and

(4) In the fourth stage, environmental awareness becomes an integral part of professional skills and everyday life choices. Motivation, knowledge and skills build up an environmental awareness that has developed a holistic one where the environment is no longer perceived from a human-centric point of view but it is realized to have value as such.

The rate at which the environment is deteriorating at a very fast rate has compelled nations to introduce environmental awareness education in school curricula. According to the North American Association for Environmental Education (NAAEE),

Environmental education is a process of developing a world population that is aware of and concerned about the total environment and its associated problems, and which has the knowledge, skills, attitudes, motivations and commitment to work individually and collectively towards solutions of current problems and the prevention of new ones.  
(NAAEE, 1996)

Sengupta, Das and Maji (2010) believe that environmental education is a necessary tool to help one to understand and appreciate the inter-relationship among man, his culture and his bio-physical surrounding. According to them, people can be sensitized about

environmental issues through environmental education by utilizing various educational approaches to teach and learn about and from the environment with stress on practical activities and first hand experiences.

The urban environmental sanitation is deplorable in many cities of the developing world leading to the spread of preventable diseases such as cholera, diarrhoea, typhoid fever, etc. and this has necessitated the global campaign for environmental awareness and educational programmes (Adedipe, *et al* 2005).

Communication campaigns for reaching certain audiences, developing messages and selecting and or producing the appropriate resources and media to reach these audiences. The aim of environmental awareness is to make people from all walks of life of specific issues related to their surroundings, including living and non-living elements, example, land, soil, plants, animals, air, water and other humans, as well as awareness of their built, social and economic surroundings, and the impacts of our actions on these (Schmidt, 2007).

Environmental Sanitation Education was introduced in the National Primary Science Core Curriculum in Nigeria in order to create adequate awareness about the environment among children. It is believed that the primary school age is regarded as the most impressionable age, when children are more receptive, strongly motivated and more likely to develop positive environmental attitudes. Geddes (1889, cited in Anijah, Eneji & Ubom 2013) supports this view when he opined that a child brought into contact with the profound realities of his environment is likely to learn better and also develop a creative attitude towards his surroundings (Anijah-Obi *et al.* 2013). According to Anijah-Obi *et al.*, environmental decrees and legislations were promulgated to enforce sanitation bye-laws on siting of building and waste disposal in

order to keep the nation clean and healthy.

According to Sengupta *et al* 2010, good environmental education at school stage is about developing environmental sensitivity and awareness by going out in nature and integrating outdoor knowledge with classroom environment. They went further to state that environmental education should be holistic, location specific and encompassing all that is around us.

Schmidt (2007), in a study predicted that 'being enrolled in a course on environmental issues would be associated with an increase in pro-environmental attitudes and behaviour, and also increase the correlation between environmentally-conscious attitudes and behaviours as a function of course participation'(p. 3). According to the study, students who took part in the class reported higher level of environmental awareness than students who did not take part in the class. It is therefore believed that environmental awareness education would influence students' attitudes positively towards the environment.

### **2.2.1. Environmental Sanitation Awareness in Developing Countries**

Grassroots environmental movements also emerged in various developing countries as it did in the developed countries. These countries attracted attention at the global level which led to initiatives to address these problems. The 1972 Stockholm conference on the human environment was one such initiative. It was this conference that gave developing countries the opportunity to bring their own environmental problem to the fore and this led to greater internationalization of the UN environmental agenda (Buss, 2007).

The environmental movement in India began in the 1980s (Sriramachari, 2004). According to (Sriramachari, 2004), the biggest event that developed the movement was the Bhopal gas leakage on December 3, 1984. It released about 40 tons of methyl isocyanate which killed over 3,000 people (Sriramachari, 2004). India has a national campaign against Coca Cola and Pepsi Cola plants due to their practices of drawing ground water and contaminating fields with sludge. During the past twenty years, according to Karan (1994), people in various regions of India have formed nonviolent action movements to protect their environment, their livelihood and their ways of life. These environmental movements have emerged in response to projects that threaten to dislocate people and to affect their basic human rights to land, water and ecological stability of life support systems (Karan 1994).

The latest Arab Human Development Report published by the United Nations (2009) gives a detailed assessment of the most significant environmental aspects which pose serious challenges and threats to the future development and human security in the Arab countries. The emphasis was particularly on the threats of water shortages, desertification, pollution and climate change and called for the need for more conservation and sustainable use of natural resources.

Awareness of environmental sustainability issues is believed to be considered very low in sub-Saharan Africa (Ekpenyong, 2012). According to him, awareness of other social problems such as conflicts, corruption, and food security has been created than awareness on environmental issues in sub-Saharan Africa. The factors attributed to the low environmental awareness in Africa are illiteracy and poverty, which means that poor families are more concerned about daily survival than keeping an eye on environmental issues. However, in August 2002, South Africa hosted the World

Summit on Sustainable Development (WSSD) also known as the “Johannesburg Declaration on Sustainable Development”, as a follow-up conference to the Earth Summit held in Rio de Janeiro in 1992 (Doran, 2002). The agenda of the conference was organized around five issues defined in the WEHAB Initiative: Water and sanitation; Energy; Health; Agriculture; and Biodiversity. Many of the environmental and developmental issues faced by Africans received more attention than in past international environmental summits. As a result, many developed countries, including the United States, promised funds to Africa to address development and environmental challenges. The United States pledged \$4.5 billion over the next three years to combat HIV/AIDS, improve access to safe water and a project in the Congo River Basin to promote forest conservation, and a project sponsored by the European Union to bring water and sanitation services in countries throughout sub-Saharan Africa. Historically, the political climate of a country is very important to the growth or decline of civil society activities; under autocratic and repressive regimes, the environmental movement in West Africa, particularly in Nigeria’s Niger Delta, has suffered considerably.

One other major effect of WSSD being held on African soil has been an increase in environmental awareness. This began even before the conference as non-governmental organizations and citizens' groups throughout Africa started collaborating to bring their issues to the forefront of the summit. The increase in environmental awareness was not just seen among NGOs, but also within governments and among the general population. As people learn more about environmental degradation, they could begin to demand that their governments address the issues more forcefully. While it is possible that this increase in awareness could lead to strong, enforceable environmental legislation in African countries, most countries in Africa still face significant problems

of poverty that will have to be addressed before significant environmental action is feasible.

Until the late 1980s, solid waste management policies and programmes in most African cities were formulated by government agencies without significant public participation. However, political and social changes across the continent in the 1990s, including the rise of Non-Governmental Organizations (NGOs), have fostered an increased awareness of environmental issues among the public participation (African Development Bank (ADB) July, 2002). Chukwuma (1998), has found that not only the official government policies but also public awareness or public concern for environmental issues as well as the readiness to take cost for neutralizing or at least minimizing the negative consequences of their behaviour is crucial. According to ADB (2002), resistance to municipal solid waste incinerators in countries like Cote d'Ivoire, Senegal and South Africa reflect an emerging involvement of the public in the debate and policy formation process of municipal solid waste.

Environmental protection in Tanzania, according to Anderson & Slunge (2005), began during the German occupation of East Africa (1884-1919). According to her, colonial conservation laws for the protection of game and forests were enacted, whereby restrictions were placed upon traditional indigenous activities, such as hunting, firewood collecting and cattle grazing. In 1948, Serengeti was officially established as the first national park for wild cats in East Africa. Since 1983, there has been a more broad-reaching effort to manage environmental issues at a national level, through the establishment of the National Environment Management Council (NEMC) and the development of an environmental act. Health problems in Dar es Salaam in Tanzania have been aggravated by rapid urban growth and environmental degradation. At the

request of the Ministry of Health in Tanzania and WHO, in January 1977, a seminar was organized to raise the awareness among decision-makers on the importance of food safety in markets in Dar es Salaam. As a result of these meetings, broad-based support for the *Dar es Salaam Healthy Marketplaces project was established* (A guide to healthy food markets, WHO 2000).

Brazil has a history of little environmental awareness although it has the highest biodiversity in the world and also the highest amount of habitat destruction. It came under scrutiny with the United Nations Conference on Environment and Development in Rio de Janeiro in 1992. De Mello (1998) in her research in Cubatao, Brazil says air, water and soil pollution have affected most of the region's original wetlands and surrounding tropical forest with severe loss of biodiversity. According to her, although environmental degradation has been serious in Cubatao since the late 1950s, pollution control was absent from the governmental agenda for more than 20 years. However, in the early 1980s, several segments of Cubatao community decided to form a coalition to demand for immediate measures to reduce pollution and to improve living conditions of the Cubatao region (De Mello, 1998). As a result of the emergence of a popular environmental movement and the increasing awareness among residents, the governor of Sao Paulo, Franco Montoro, in 1982, appointed an environmental engineer as Cetesb (the state environmental protection agency) president and gave pollution control priority on his government agenda. Cetesb carried out a pollution control programme that significantly reduced air, water and soil pollution in Cubatao in 1983 (De Mello, 1998). The Blue Wave Foundation was also created in 1989 and has partnered with advertising companies to promote national education campaigns to keep Brazil's beaches clean.

Aspects related to the legal framework of urban cleaning, especially solid waste management in Brazil, are provided for in the National Basic Sanitation Policy, Law No. 11445 of 2007, in which the solid waste plan must integrate municipal sanitation plans and the National Policy on Solid Waste (PNRS), Law No. 12305 of 2010, regulated by Decree No. 7404 of 2010, which after twenty years in the National Congress established a new regulatory framework for the country (Adedipe, *et al.* 2005).

According to them, the National Policy on Solid Waste strengthens the principles of integrated and sustainable waste management. It proposes measures to encourage the formation of public consortia for regionalized management, with the aim to increase the management capacity of municipalities through economies of scale and cost reduction, in case of shared waste collection, treatment and disposal systems. It is innovative in the country in that it proposes shared responsibility for the lifecycle of products and reverse logistics of returned products, prevention, precaution, reduction, reuse and recycling, targets for reducing waste disposal in landfills, and environmentally appropriate disposal of waste in landfills. In terms of urban social and environmental sustainability, it creates mechanisms for inclusion of waste pickers in municipal selective collection systems and enables strengthening the networks of waste pickers associations and establishing regional storage and marketing centers.

To set higher recycling targets and generate jobs in the recycling and selective collection supply chain for waste pickers, the PNRS provides for sectorial agreements to be signed between the government and the business sector. These are intended to enable the reverse logistics and implement and make selective collection universal in Brazilian municipalities. Through specific regulation, a programme should also be



implemented aimed to improve the working conditions and opportunities for the social and economic inclusion of waste pickers.

The law requires, within two years from its regulation, the development of federal, state and municipal level solid waste plans that eradicate dump sites and set gradual reduction, reuse and recycling targets, with a view to reducing the amount of waste sent for disposal on the ground. Access to federal funds earmarked for solid waste management will be conditional on submission of the aforementioned plans.

The Interministerial Steering Committee was established early in 2011 for the implementation of reverse logistics systems. The purpose is to ensure the reuse, recycling or collection of solid waste by the industry concerned. To this end, we sectorial agreements will be signed with various production chains. Thus, manufacturers, distributors, retailers and consumers should share responsibility for the waste produced.

### **2.2.2. Environmental Sanitation Awareness in Ghana**

Since the mid-1990s, civil society engagement in environmental issues has grown considerably in Ghana (UN report, Ghana Country Profile, 2002). This increase in activity has been seen at the community level in particular. The favourable political stability, rule of law, freedom of speech, and democracy have allowed steady growth for the civil society space in Ghana since the mid- 1990s and as a result some environmental NGOs and groups have gotten the chance to establish, institutionalize form networks and coalitions, and execute some remarkable community projects. Sustainable environmental management is not possible without participation by people. Meaningful participation requires that people are informed about the environmental effects of their day-to-day activities. This, I believe the government of Ghana started

when it adopted the Agenda 21.

Agenda 21 adopted at the UNCED in Rio de Janeiro in 1992, underscored the important role states play at the national level. It recommended that states consider preparing national reports and communicating the information to the Commission on Sustainable Development (CSD) including, activities they undertake to implement Agenda 21, the obstacles and challenges they confront and other environment and development issues they find relevant (UN report, Ghana Country Profile, 2002). As a result, Ghana started taking steps to show her commitment to the implementation of Agenda 21 by putting in place adequate national policies, regulatory and institutional frameworks. The Environmental Protection Agency (EPA) was established under the *Environmental Protection Agency Act* (Act 490 of 1994) to enforce the environmental legislation of the country and an Environmental Sanitation Policy was formulated in 1999. The EPA is responsible for enforcing environmental policy and legislation, prescribing standards and guidelines, inspecting and regulating businesses and responding to emergency incidents (EPA Legal and Policy Framework-2.1, 2009). The EPA is responsible for issuing environmental permits and pollution abatement notices for controlling waste discharges, emissions, deposits or other source of pollutants.

According to Sanitation Country Ghana Profile report (2004), National Environmental Sanitation Policy Coordinating Council (NESPoCC) has been put in place since 2000 to expedite the implementation of the National Sanitation Policy. The membership includes the Ghana Health Service /Ministry of Health (GHS/MOH), Ministry of Environment Science and Technology (MEST), Ghana Education Service (GES), Environmental Protection Agency (EPA), Council for Scientific and Industrial Research (CSIR), Representatives of Metropolitan, Municipal and District Assemblies

(MMDAs), the Private Sector and Non-Governmental Organizations. Various relevant legislations for the control of waste have also been enacted (CSD Report, 2010). In addition to policies and legislation, the Ministry of Environment, Science and Technology, the EPA, Ministry of Local Government and Rural Development and the Ministry of Health prepared the following guideline for waste management:

- National Environmental Quality Guidelines (1998)
- Ghana Landfill Guidelines (2002)
- Manual for the preparation of district waste management plans in Ghana (2002)
- Guidelines for the management of healthcare and veterinary waste in Ghana (2002)
- Handbook for the preparation of District level Environmental Sanitation Strategies and Action Plans (DESSAPs).

The District Assemblies have therefore been empowered to become the key institutions for the management of sanitation and waste at the local and community level with the support of the EPA and other institutions. The Criminal Code (Act 29 of 1960) and Revised Bye-laws of all MMDAs have enough laws to support the Environmental Sanitation Service delivery and enforce the compliance of sanitation rules. However, these laws are not deterrent enough and logistical problems make MMDAs impotent in ensuring clean, safe and healthy environment (Sanitation Country Profile, 2004).

Environmental education and awareness was intensified through various capacity building programmes, seminars and workshops to come out with practical solutions to the waste management menace. As a result of creating environmental awareness among Ghanaians, a National Environmental Sanitation Day has been established and observed annually to sensitize the general public in keeping their environment sound and clean (CSD Report, 2010).

## **2.3. Attitudes of people towards environmental sanitation**

### **2.3.0. Meaning of Attitudes**

Attitude has been a subject of interest to many researchers as well as psychologist. It can function as a shield to someone or it can even function as a weapon to someone. Attitudes play a major part in determining a person's personality. This is because attitudes affect the way people perceive and act towards people, objects or events that they encounter. Defining an attitude is problematic and there is still no consensus on a definition for it. Also, attitudes are often associated with multiple, and even contradictory values (Schultz, 2002). The concept has therefore been defined in various ways by various researchers, usually depending on their specific theoretical framework and the constructs they investigated. For example, Plug, Meyer, Louw and Gouws (1986) define an attitude as a relatively stable, predominantly learnt disposition of an individual towards a specific object - for example, people, things or ideas. Ajzen and Fishbein (1980: cited in Meena, Kumar, & Meena. 2009), believe that an attitude consists of and is influenced by three components, namely; the subject (a person with specific attitude), the object (at which the attitude is directed) and the situation (in which the subject and object interact with each other). A change in any of these components can cause the attitude to change. Secord and Backman (1969: 167) define attitudes as certain regularities of an individual's feelings, thoughts and predispositions to act toward some aspect of his environment. Arnold *et al* (1965: cited in Vakola and Nikolaou, 2005) indicated that "attitudes reflect a person's tendency to feel, think or behave in a positive or negative manner towards the object of the attitude".

Baron and Byrne (1987: 179) on the other hand define attitudes as 'lasting, general evaluations of people (including oneself), objects or issues. Attitude is lasting because

it persists across time. A momentary feeling does not count as an attitude'. To them, attitudes are lasting since they remain across time. Vaughan and Hogg (1995) also collaborate Baron and Byrne when they note that attitudes are relatively permanent-persistent across times and situations. Similarly, Schneider (1988, cited in Abidin, Ibrahim and Akia, 2011), defines attitudes as evaluative reactions to persons, objects and events which includes beliefs and positive and negative feelings about the attitude object. He also added that attitudes can guide our experiences and decide the effects of experience on our behaviour. Eagly and Chaiken (1993: cited in Adams, 2003). Support this notion when they also define attitude as psychological tendencies that are expressed by evaluating a particular entity (for example the environment) with some degree of favour or disfavour. According to them, evaluative response may be expressed as a cognitive tendency, as an affective tendency, or as a behavioural tendency or a combination of two or all three of these psychological tendencies An attitude only develops after a person has responded evaluatively to the attitude object and is then expressed or manifested in overt cognitive, affective or behavioural responses (Willers, 1996, p.28: cited in Adams, 2003).

From the various definitions there appears to be consensus among the various definitions of attitude regarding the following: an attitude is evaluative in nature; an attitude is learnt; an attitude is relatively lasting; an attitude is always involving an object and an attitude is predisposing the subject act in a specific manner towards a given object (Thirion, 1990: cited in Adams, 2003).

### **2.3.1. Environmental attitudes**

Environmental attitudes is defined by Holahan (1982: 92: cited in Adams, 2003) as people's favourable or unfavourable feelings towards some feature of the physical environment or towards an issue which pertains to the physical environment. Stern and Dietz (1994) agree and add that a person's attitude towards the environment is based on the relative importance that person places on him/herself, other people and the natural environment. In other words, a person's attitude towards the environment is based on his or general set of values. This assertion is supported by Schultz (2000) when he says people's attitudes towards the environment and the type of concern they develop towards the environment are associated with the degree to which they view themselves as interconnected with nature. The researchers, however, have never been able to establish a strong relationship between demographic variables and environmental concern. Results from these researches have been inconsistent and even most of these variables contradict each other.

### **2.3.2. Factors that influence environmental attitude**

With regard to environmental attitudes, Thompson and Barton (1994) state that differing value systems motivate different people to be concerned about the environment. When assessing how people operate within the environment it is important that one looks at their attitudes and their actions towards the environment. It is also important to ask if and how different segments of the population differ with regard to environmental attitudes and behaviour (Scott & Willits, 1994, Bell, Greene, Fisher & Baum, 2001)

Various studies have indicated that different groups of people have different attitudes toward the environment. Researchers have initially attempted to explain the differences by focusing on demographic variables such as level of education, age, gender, ethnicity, socio-economic status and place of residence as possible determinant of environmental attitudes.

### **2.3.2.1. Level of education**

Findings in various researches indicate that there is a link between environmental attitudes and level of education. Studies in the U.S. and South Africa indicate that individuals with high academic achievement tend to be more environmentally concerned than those of low academic achievement (Blum, 1987; Buttel & Flinn, 1978b; Grieve & Staden, 1985; Reynolds, 1992; Craffert & Willers, 1994; Willers, 1996).

### **2.3.2.2. Age**

Researchers such as Bell and his colleagues (2001) and Fiedeldej, Craffert, Fiedeldej-Van, Marals, Staden & Willers, (1998) believe that age is also one of the predictors of environmentally concerned attitudes. Fiedeldej *et al.* for example refer to a research in the US that shows that younger adults express concern for the environment than their older counterparts. Studies of Arcury and Christianson (1990) support this viewpoint and also show that age is inversely related to positive environmental attitudes as older people were found to be less concerned about the environment than younger ones. However, Lyons and Breakwell (1994) have a counter opinion. They believe that age is positively related to environmental concern.

### 2.3.2.3. Gender

Gender has shown poor consistency and poor conclusiveness as a predictor of environmental attitudes (Adams, 2003). Some studies have shown that females are more concerned about the environment than males (Williams & McCrorie, 1989). Research by Blocker and Eckberg (1997) support this and extend the findings to include concern for animals. According to them, it is possible that the natural caretaker role of some women influences their level of environmental concern either directly or indirectly via experiential behaviour. Researchers such as Arbuthnot and Lingg, (1975); Arcury and Christianson (1990) oppose this view when they say that men are more environmentally concerned than women. This viewpoint is supported by Schahn and Holzer (1990), who explain that the difference in levels of environmental concern between men and women are dependent on the specific environmental issue under consideration. Research by Scott and Willits (1994) suggest that men may be more likely to engage in relevant political behaviour whereas women are more likely to participate in environmentally protective consumer behaviour. Some research has shown no differences between the level of environmental concern of males and males (Blum, 1987; Roth & Perez, 1989).

Franson and Garling (1999) state that research investigating the relationship between gender and environmental concern has yielded ambiguous results, while Bord and O'Connor (1997) claim that females show higher levels of concern than males only in relation to environmental matters that involve specific risks and suggest this as a possible reason for the inconsistent results reported.



#### **2.3.2.4. Ethnicity/Race**

Like gender, ethnicity shows poor consistency and poor conclusiveness as a predictor of environmental attitudes. A study in the US by Taylor (1989) shows that white Americans are generally more concerned about environmental issues than Afro-Americans. Another research conducted in Florida by Hershey and Hill (1977) shows that Afro-American children consider pollution and environmental quality to be less serious problems than their counterparts. An investigation conducted by Willers (1996) in South Africa revealed that black Africans were more concerned about environmental problems which affect their lives personally, while the other ethnic groups considered both global and local problems, which may not affect them personally, to be more serious.

#### **2.3.2.5 Socio-economic status**

Studies show that the middle and upper classes were more concerned about the environment than lower classes (Lyons & Breakwell, 1994). Learners from higher socio-economic background were found to be more environmentally concerned than learners from lower socio-economic backgrounds. According to them, the difference may reflect the differences in parenting influences, as higher-class parents are more likely to be knowledgeable and discuss these issues with their children than parents from lower social classes.

Taylor (1989), states that there are social, economic and psychological reasons why blacks seem to be less concerned about the environment. According to her those who form part of the lower socio-economic classes tend to live in poorly serviced, densely populated and polluted surroundings and are less aware of polluted and overcrowded

than middle and upper classes counterpart. This assertion is supported by Bell *et al.* (2001) who agree and add that socio-economically disadvantaged people do not possess the political or economic power or sufficient information (knowledge) to address these forms of environmental racism if even they are aware of the hazards they face. Since blacks tend to make up the majority of people living under these conditions, this may explain why they tend to be less environmentally concerned.

#### **2.3.2.6. Place of residence**

Place of residence can also be seen as a predictor of environmental attitudes. Fiedeldey *et al.* (1998) suggest that urban residents are more likely to be environmentally concerned than rural ones. Lyons and Breakwell (1994) agree that place of residence and academic achievements are related environmental concern. They also believe that urban people are more positive in their attitudes toward the environment than rural people and that those with high academic achievement tend to be more environmentally concerned than those with low academic achievement. Willers' (1996) finding among South Africans also show that the level of education and place of residence interact in predicting environmental concern.

#### **2.4. Factors that influence people's attitude towards waste management**

According to Onibokun and Kumuyi, (1999); Hardoy, Mitlin & Satterthwaite, (2001); Pacione, (2005 cited in Baabereyir, 2009), data is generally lacking in the waste sector of developing countries, available studies suggest that solid waste management is generally characterized by inefficient collection methods, inefficient coverage of the collection systems and improper disposal of municipal waste. Attitudes of people also contribute to poor sanitation in urban cities. In an investigation that was conducted in

Kampala, Uganda by Namilyango College (2001, cited in Baabereyir, 2009), partly blamed the poor environmental conditions in the city on the unconcerned attitudes of the public and the failure of residents to hold the authorities accountable for the situation. Similarly, Solomon (2011), also noted that even though most residents in poor country cities complain about poor environmental conditions in their settlements, they are most often not prepared to organise themselves in groups to mount pressure on the authorities to address their concerns. Freduah (2007) conducted a study at Nima in Accra on the problems of solid waste management and says that people's apathetic and lackadaisical attitudes towards matters relating to personal hygiene and environmental cleanliness, of which waste management in general is a focal point, should not be overlooked.

Although weaknesses in waste management have been attributed to lack of logistics and financial management, people's attitudes towards waste management should not be ignored (Nze, 1978). He outlined several factors, which have conspired to promote the massive build-up of urban garbage and waste. Nze noted that they resulted from inadequate and deficient infrastructure, inadequate structures for environmental administration, lopsided planning pastures and disregard for basic aesthetics, industrial and commercial growth, and other human factors. According to him, urban wastes in Nigeria are regarded as "non-resources" having at best a nuisance value and therefore not surprising that an equally negative posture has been adopted in managing wastes from urban concentrations in the country.

According to Songsore (1992: cited in Freduah, 2007), solid waste management has remained one of the intractable problems with the Accra Metropolitan Assembly (AMA). His argument supports the fact that waste producers generate large volumes of

wastes but do not dispose of waste in an acceptable manner. This is important to the study because people's attitudes towards waste management are questionable. With the establishment of the Waste Management Department (WMD) of Metropolitan and Municipal Assemblies, the public tends to have the view that the departments should be solely responsible for managing wastes. He further observed that indiscriminate disposal of waste has resulted in the clogging of the few built drainage channels and natural watercourses with garbage and silt, which are not removed regularly. This argument is not peculiar to AMA alone, the problem reflects the situation in most urban areas. The city of Accra for instance has been engulfed in refuse, with drains and gutters mostly choked with rubbish.

Edmunson (1981, cited in Freduah, 2007), in his study on refuse management in Kumasi, pointed out that most sites used for refuse dumps are chosen without taking into consideration the distance to be covered by residents. Thus, he recommended that sanitary sites should be sited close to waste generators. Adelaide (1995: cited in Freduah, 2007) also observed that disposal sites in Accra are situated quite a distance away from inhabitants or sellers. Thus, one cannot dispute the fact that long distance disposal sites discourage inhabitants and sellers from making use of them. They therefore resort to littering their surroundings. He attributes these unacceptable habits of indiscriminately disposing of waste to the public's lack of waste disposal culture as well as inadequacy of waste disposal facilities. This testifies to the importance of attitude in waste management issues. Agbola (1991) also support this assertion when he said that cultural derivatives, beliefs, perceptions and attitudes are learned response sets. They can therefore be modified or changed through education. This points to the fact that people's unconcerned attitudes towards solid waste can be changed for the better through education. According to Pacey (1990), formal education for women is a

pre-requisite for change in sanitation behaviour.

Another factor which influences attitudes of people towards waste management is income level. Low income urban communities generate lower waste volumes because they buy little and are less wasteful in consumption. In contrast the higher income groups have higher disposable income and purchase larger volumes of consumable goods that have high waste portions and also practice a more wasteful consumption pattern (Okot-Okumu 2008; Scheinberg, Muller & Tasheva, 2011). This observation is consistent with what has been reported by other authors (Hina Zia & Devadas, 2007; Passarini, Vassura, Monti, Morselli & Villani, 2011; Supriyadi, Kiwoke & Birley, 2000). Low income urban community spend most of their disposable income for purchase of food items most part of which are consumed and little disposed, while the higher income groups purchase a variety of goods some with associated wastes in form of non-consumables (e.g. packaging, containers, etc.). This goes to confirm the findings of Kaseva and Mbuligwe (2005); Okot-Okumu and Nyenje (2011) that waste collection vary between low-income and high-income groups. According to them high-income group dispose of waste often 3 times a week. They went further to say that the urban poor receive very low to no waste collection services due to inaccessible roads, unplanned facilities and neglect by urban councils. Waste collection in East Africa, where the study was carried out, is not based on the total amount of waste generated but rather on the level of income of the service area (Kaseva and Mbuligwe, (2005); Okot-Okumu and Nyenje, (2011).

There are also the negative factors of attitude and culture that have prevented in some cases the very important element of public participation as noted by some authors (Kaseva and Mbuligwe 2005; Palczynski 2002; Rotich et al., 2006; Okot-Okumu,

2011). The low standard of living (poor pay), education (high illiteracy levels) and the economy (low GDP per capita) are influencing factors that cause low levels of willingness to participate in public management matters. The combination of all these factors together with the urban council weaknesses that cause management failures have led to the accumulation of wastes in neighborhoods leading to environmental degradation and threat of disease epidemics such as cholera, diarrhoea and parasites.

## **2.5. Waste management strategies**

### **2.5.0. Definition of waste**

Although much has been written on waste problem, the definition of the term waste is quite rare in the scholarly literature on the topic (Baabereyir, 2009). As noted by Palmer (in Baabereyir, 2009) “the term is frequently left as undefined primitive in spite of its critical importance”. According to him, definitions of waste are commonly found in documents such as dictionaries, encyclopaedia and technical reports of governments and organizations. For example, the *Encarta Dictionary* defines waste as “unwanted or unusable items, remains, or by products, or household garbage” while the *New Shorter Oxford English Dictionary on Historical Principles* defines it as “the unusable material left over from a process of manufacture, the use of consumer goods etc. or the useless by-product of a process”.

Gilpin (1996, 228, cited in Baabereyir, 2009) defines waste as “all unwanted and economically unusable by-products or residuals at any given place and time, and any other matter that may be discarded accidentally or otherwise into the environment”. He suggests that the constituent of waste must “occur in such a volume, concentration, constituency or manner as to cause significant alteration in the environment” Thus,

apart from waste being an unwanted substance that is discarded, the amount of it and the impact it makes on the environment also becomes important considerations in defining waste.

McLaren (1993, cited in Baabereyir, 2009) has also referred to waste as the “unwanted materials arising entirely from human activities which are discarded into the environment”. This notion is corroborated by Jessen (2003) who has noted that “waste is human creation” and “there is no such thing as waste in nature where cut-offs of one species become food for another”. On his part, Palmer (2004) says that an item becomes a waste when the holder or owner does not wish to take further responsibility of it. As a default definition, he suggests that “any substance that is without an owner is waste’. Davies also describes waste as:

...unwanted or unusable materials...that emanate from numerous sources from industry and agriculture as well as businesses and households...and can be liquid, solid or gaseous in nature, and hazardous or non-hazardous depending on its location and concentration. (Davies 2008:4, cited in Baabereyir, 2009).

Drawing from the views expressed above, the definition of waste in this study is any substance (liquid, solid, gaseous or even radioactive) discarded into the environment because it is unwanted, which causes significant nuisance or adverse impact in the environment.

### **2.5.1. The concept of waste management**

No single solution has been identified that completely answers the question of what to do with waste. The business of keeping our environment free from the contaminating effects of waste materials is generally termed waste management (Baabereyir, 2009). Gbekor (2003:18) refers to waste management as “the collection, transport, treatment

and disposal of waste including after care of disposal sites”. Similarly, Gilpin (1996:201, cited in Baabereyir, 2009) defines waste management as “purposeful, systematic control of the generation, storage, collection, transportation, separation, processing, recycling, recovery and disposal of solid waste in a sanitary, aesthetically acceptable and economical manner”.

Schubeller *et al.* (1996:7, cited in Baabereyir, 2009) focus on municipal solid waste management when they define waste management as ‘the collection, transfer, treatment, recycling, resource recovery and disposal of solid waste in urban areas”.

.Kofoworola (2007, cited in Agwu, 2012) corroborates this notion when he describes solid waste management as “the process of collecting, storing, treatment and disposal of solid wastes in such a way that they are harmless to humans, plants, animals, the ecology and the environment generally”.

It can be deduced from these definitions that waste management is the practice of protecting the environment from the polluting effects of waste materials in order to protect public health and the natural environment. Thus, the priority of a waste management system must always be the provision of a cleansing service which helps to maintain the health and safety of citizens and their environment (Cooper, 1999, cited in Baabereyir, 2009). Gilpin (1996, cited in Baabereyir, 2009) further regards the business of waste management as a professional practice which goes beyond the physical aspects of waste. According to him, it also “involves preparing policies, determining the environmental standards, fixing emission rates, enforcing regulations, monitoring air, water and soil quality and offering advice to government, industry and land developers, planners and the public”. Waste management, therefore, involves a wide range of stakeholders who perform various functions to help maintain a clean, safe and



pleasant physical environment in human settlements in order to protect the health and well-being of the population and the environment.

### **2.5.2. Waste management practices**

Every community or region has its own unique profile regarding waste of all forms. The attitudes of people in different regions of each country vary regarding waste management strategy. The diversity of communities and their waste is one reason why no single approach to waste management has been accepted as the “best method”. Since there is no preferred, every community must create its own “best approach” to dealing with its waste. Decisions for alternative waste management strategies are often made locally: however, there are also regional drivers based on national regulatory and policy decisions (Bogner, Abdelrafie & Diaz, 2007: 611).

#### **2.5.2.1. Waste collection**

The waste we generate at our homes, workplaces, factory and farms must first be collected or gathered together at a central point before it is removed for disposal. Waste from our homes is generally collected by our local authorities through regular waste collection, or special collection for recycling. In Montego Bay in Jamaica, for example, waste is meant to be collected from all residential areas twice a week but the actual frequency of collection is said to vary from twice a week in formal sector residential areas to never in some of the largest informal settlements (Ferguson, 1996, cited in Baabereyir, 2009).

### **2.5.2.2. Waste transport**

After waste has been collected or gathered, it is usually transported to some final disposal point such as community waste dumps and incinerators. Some households and commercial places hire the services of waste management companies who regularly collect their waste for disposal.

### **2.5.2.3. Waste treatment**

Waste treatment techniques seek to transform the waste into a form that is more manageable, reduce the volume or reduce the toxicity of the waste thus making it easier to dispose of. Treatment methods are selected based on the composition, quantity, and form of the waste material. Some treatment methods being used today include subjecting the waste to extremely high temperatures, dumping on land or land filling and use biological processes to treat the waste.

In developing countries, however, from the 1930s to date, their own response to the need to manage wastes has been by the use of “open dump sites,” as in Africa (Onibokun & Kumuyi. 1999), Asia (Hoornweg, Lam & Chaudhry, 2005; Zurbrugg 2002), and elsewhere (Lardinois & Klundert 1995). The point must be made, however, that the effectiveness of open dumping differs from country to country. Garbage mountains point up an important truth that efficient disposal is not always completely compatible with other desirable social ends through due process, human dignity, and economic modernization.

In terms of liquid wastes, perhaps the first alarm on unsanitary conditions and their relation to health and disease is credited to Sir Edwin Chadwick of Britain, who in

1842 wrote the classic report on “Sanitary Conditions of the Labouring Population of Great Britain”. The cholera epidemics of 1849 and 1853 created the need for a response when society demanded the “removal of dirt.” John Simon in 1848 developed the famous British Public Health System, which was accepted by the United States and some parts of Europe (Dubois et al. 1956, cited in Andrade, Motta & Amaral 2013), and later by other countries as well.

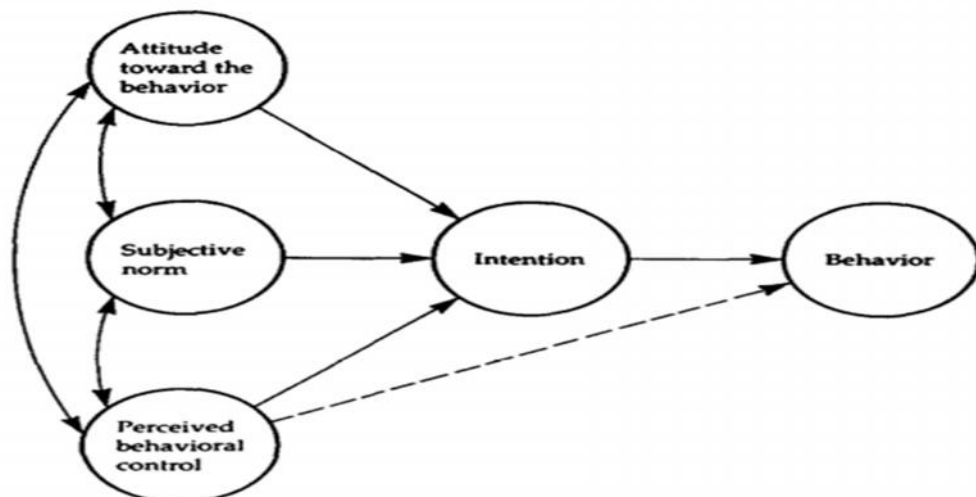
## **2.6. Theoretical Framework**

Since the 1950s, researchers have tried to understand and explain why people do what they do (Pickens, 2005). Although many possible theories could be drawn from social psychology for the study, Ajzen’s theory of Planned Behaviour (TPB) fits well within the study. Theory of Planned Behaviour is a theory of attitude-behaviour relations whose main premise is that behavioural intention is the direct antecedent of behaviour (Boarnet & Crane. 2001). According to the theory, behavioural intention indicates not only a desire to act (as attitude alone does), but also a commitment to act. Intension strength is therefore a measure of the likelihood that one will perform a behaviour (Ajzen, 1991: cited in Boarnet, et al., 2001). The theory states that an individual’s behavioural beliefs, normative beliefs and control beliefs respectively determine his or her attitude towards a given behaviour, subjective norm and perceived behavioural control, which collectively influence the behavioural intention and actual behaviour of the individual when participatory decisions in an action are voluntary and under an individual’s control. According to Bern (1970) and Fishbein and Ajzen (1975: cited in Shore, Tashchian & Adams, 2000), attitude is based on evaluative beliefs and beliefs about a particular object. There is, therefore, the need to examine human orientations towards the environment. Attitude formation is a result of learning, modeling others, and direct experiences with people and situations. Attitudes influence our decisions;

guide our behaviour, and what we selectively remember. Attitudes come in different strengths and like most things that are learned or influenced through experience, they can be measured and they can be changed. The TPB states that intention strength is determined by three elements:

- Attitude toward the behaviour and its outcomes
- Social norms about the behaviour and pressure to conform to those norms
- Perceived control over the performance of the behaviour

In many ways people's behaviour obviously relates to their opinion and attitudes and this has a significant effect on the environment. Figure 2.1 depicts the theory in the form of a structural diagram. A central factor in the theory, according to Ajzen, (1991) is the individual's intention to perform a given behaviour. The perceived behavioural control, together with behavioural intention, can be used directly to predict behavioural achievement.



**Figure 2.1: Theory of Planned Behaviour**

Source: Ajzen, 1991

This chapter has reviewed the literature related to the various themes in the study. These include concepts related to the environment and environmental sanitation; environmental sanitation awareness; factors that influence environmental attitudes; factors that influence people's attitudes towards waste management and the concept of waste management. Also under this chapter is the theoretical framework for the study.



## CHAPTER THREE

### RESEARCH METHODOLOGY

#### 3.0. Introduction

Research methods, as defined by Blaikie (2000), are techniques in which data are collected, managed and analyzed to answer research questions. This chapter discusses the methods and procedures that were employed in carrying out the study. This includes research design, the population and sampling, sampling technique, data collection and data analysis.

#### 3.1. Research Design

The purpose of this study is to describe how traders feel about the poor environmental sanitation at the Hohoe market. The research design is a qualitative case study and the methods used in data collection included semi-structured in-depth interviews and observation. Qualitative case study research is “an approach to research that facilitates exploration of a phenomenon within its context using variety of data sources” (Baxter & Jack, 2008:544). Yin also points out that “the case study method allows investigators to retain the holistic and meaningful characteristics of real-life events ....such as ....small group behaviours, organisational and managerial processes ....school performance ...” (Yin, 2003:102). Qualitative research is grounded in a broadly interpretivist philosophical position, in the sense that it is concerned with how the social world is interpreted, understood, experienced, and produced (Carson, Gilmore, Perry & Gronhaug, 2001). Interpretivism regards reality as a complex social construction of meanings, values and lived experience Cohen *et al.*, 2000 and Grix,

(cited in Baabereyir, 2009:105). This, according to Robson, 1993 and Bryman, 2004 (cited in Baabereyir, 2009:105) can better be understood through people's interpretive or meaning-endowing capacities rather than through our sensory observation and experience of the world. To this effect, data for interpretivist research is obtained through the interpretations people give to situations and experiences of reality. According to Creswell (1998), qualitative research is: "An inquiry process of understanding based on distinct methodological traditions of inquiry that explore a social or human problem. The researcher builds a complex, holistic picture, analyzes words, reports detailed views of informants, and conducts the study in a natural setting" (99).

The approach usually involves "in-depth investigation of phenomenon through such means as participant observation, interviewing, archival or other documentary analysis or ethnographic study" (Ragin, 1994:91). One of the advantages of this approach, according to Baxter and Jack, (2008) is that, there is close collaboration between the researcher and the participants, while enabling participants to tell their stories. Through these stories the participants are able to describe their views of reality and this enables the researcher to better understand the participants' actions (Lather, 1992, cited in Baxter & Jack, 2008). This approach was preferred by the researcher because it provides opportunity to gain insight into people's attitudes, behaviours and value systems. The use of qualitative approach was therefore aimed at gathering in-depth understanding of traders' behaviour and reasons that govern such behaviours. It allowed for the conduct of research within the real-life context in order to describe the attitudes of traders towards environmental sanitation. The purpose of this design was also to help the researcher get in-depth focus on a phenomenon in its naturalistic setting. It also has the ability to incorporate a variety of different types of data gathered

using multiple data collection methods. Other reasons for using the case study design was to arrive at a comprehensive understanding of the groups under study and to develop general theoretical statements about regularities in social structure and process (Becker, 1968: 233). In line with this methodological approach, research tools associated with qualitative approach were used to collect data.

### **3.2. Population**

Since all traders in the Hohoe market generate waste or require waste disposal services or are affected by waste disposal, the entire traders in the market were regarded as the study population for this research. The population of registered traders in the Hohoe market, according to the Head of the Revenue Department of the Municipal Assembly, was 546 people comprising men and women. According to the officer, the number was the 2012 figure which had not been updated as of the time I was carrying out the research. The exact figure was not given because according to the official at the Municipal Assembly, most of the traders had not registered with the assembly thus making it difficult for the assembly to monitor activities of some traders in the market, and also generate revenue for other development projects in the market. From the information I gathered, in addition to my own observation, the number of traders could be estimated at about 950, and the accessible population that was interviewed was 25 traders.

### **3.3. Sampling techniques and procedure**

The study employed purposive sampling technique, which Tongco (2007) defines as a strategy in which particular setting, persons, or events are deliberately selected for the important information they can provide that cannot be gotten from other sources.



Purposive sampling was used not because the emphasis was on quality rather than quantity but because the objective was to become “saturated” with information on the topic (Padgett, 1998:153). Sampling is the process of selecting participants to take part in the research on the basis that they can provide detailed information that is relevant to the research. One important use of purposeful sampling is that it can be used to achieve representativeness of the settings, individuals, or activities selected. A small sample of traders was systematically selected for typicality and relative homogeneity to provide more confidence that the conclusions adequately represent the average members of the population.

Initially, 26 respondents were proposed for the study but the number increased to 27 when it became necessary to get some information from Zoomlion Ghana Limited. Consequently, 27 respondents between the ages of 21 and 62 years were interviewed. This comprised 25 traders and 1 official, each from the Environmental Health and Sanitation Department (EHSD) of the Hohoe Municipal Assembly and Zoomlion Ghana Limited. Out of the 25 traders, 16 of them were residents of Hohoe and the rest, 9 were coming from the surrounding towns to trade on market days only at the Hohoe market.

The selection of the 25 traders was based on the type of goods that they were selling; fish sellers, vegetable sellers, sachet water sellers, food vendors and store owners. Through several observations at various markets including the area of study, it came to light that these category of traders are the most generators of wastes in Ghanaian markets and therefore were the target population who could provide the best information to achieve the objectives of the study. The traders were selected taking into consideration gender, age and the items they were selling. Out of the 25 traders

selected, 17 of them were females and the rest 8 were males. More females were selected because they formed majority of the traders in the market and also are responsible for managing sanitation at home.

### **3.4. Research Instruments**

Looking at the research questions, the nature of data needed for the analysis and the prevailing conditions on the field of research, it became evident that one of the best ways to collect adequate data for the research was the use of qualitative approach. For this reason, semi-structured interviews and non-participant observations were used to collect data for the study.

### **3.5. Interview**

Qualitative interviews are not simple conversations or discussions; rather they are conversations ‘with a purpose’ (Burgess 1984: cited in Islam, 2012:82). Purposeful conversations allow researchers to explore the meaning and experiences of people’s lives, routines and feelings (Rubin and Rubin, 1995: cited in Islam, 2012:82), which reflect their past and present. The researcher used semi-structured interview to collect data from the respondents. Shaw and Gould (2001, cited in Islam 2012:82) argue that semi-structured interviews with a more or less pre-determined purpose and agenda give the opportunity to explore the in-depth experiences and perceptions of participants. They are particularly useful in exploring experiences that cannot be adequately described in close-ended questions (Taylor & Bogdan, 1998). Interviewing is one of the useful way of collecting data because the technique allows respondents to report on themselves, their views, beliefs, practices, interactions and concerns (Freebody, 2003; cited in Baabereyir, 2009:118).

Interview was preferred to questionnaire because of the difficulty of the respondents to read and understand in English. Besides, most people are more willing to talk in an interview than the case would be if they were to write or fill out a questionnaire (Robson, 1993; cited in Baabereyir, 2009: 119). It also gives the researcher the freedom to discuss a wide range of issues and it creates the opportunity for interviewees to ask for clarification when they do not understand a question just as the interviewer can also ask for elaborations on answers given by interviewees. The interview technique was employed to obtain data from traders in the Hohoe market and an official each from the Environmental Health Department of the Municipal Assembly and Zoomlion Ghana Limited.

### **3.5.1. Interview with Traders**

The researcher used almost six weeks to interview the 25 traders; the minimum time used for a respondent was 50 minutes and the maximum time used was 75 minutes. The researcher explained the purpose and objectives of the study to enhance their understanding and participation. After ensuring informed consent and confidentiality of the interviewees, I booked appointment with them; suitable time and place for the interview were also agreed on before the actual interview. The period used for the collection of data took longer period than anticipated because of interferences from customers who were buying goods from the respondents and background noises from other traders and their customers. I therefore rescheduled the interactions with those residing in the Hohoe town to either meet them on non-market days in the market or in their various homes. This arrangement worked perfectly because on non-market days there was less pressure on the respondents and this made it possible for those that I interviewed in the market to have enough time for me. But there was little I could do

about respondents coming from far places because I could only meet them on market days (Mondays and Fridays). I tried to answer any questions and to allay fears which they had concerning me, the study and its benefits. They were interested in knowing the benefits of the study to them because officials of the Municipal Assembly had met them several times on the issue of sanitation and security in the market but much has not been done about it. Therefore, they considered my presence as a long awaited opportunity for them to make their voice heard.

Considering the low level of education among some of the traders, the interview was granted in Ewe to make it possible for them to respond to the questions effectively. At the beginning of each interview, I assured the interviewees of confidentiality and anonymity. Some of the interviewees were not comfortable when I informed them of my intention to record the interview. But after convincing them to preserve their anonymity and the assurance to delete the information as soon as I made use of them, they granted my request. I started the interview with questions that the interviewees could answer easily before I proceeded to more difficult and sensitive questions as suggested by Patton (cited in Soklaridis, 2009: 725). The interview was organized into three stages. In the first stage, the purpose was to establish an understanding of the interviewees' background, asking questions about them and the number of years of trading in the Hohoe market. The second stage focused on details of sanitation situations in the market. For example, they were asked about the type of waste they generate and how they felt about the general sanitation situations in the market. In the third stage, having reflected on their background and sanitation situations at the market, respondents were asked about measures they felt could be taken to improve sanitation in the market.

Although there was a basic outline for the interviews, it was not possible to keep to this structure because the questions were adjusted depending on the information provided by the respondents. “In qualitative interviewing, you change the questions you ask depending on what you learned or failed to learn” (Rubin & Rubin, 1995: cited in Islam, 2012:83). In order to allow the participants to respond to the questions in their own words, I was careful not to control the content of the interview too rigidly. In some instances, emotions of the respondents run high during the interview. This at times forced me to remain silent or take long pauses, so that the respondent had time to get ready for the next discussion point. Believing that the study would improve the sanitation situations in the market, the respondents did not withhold much information from me, except some personal information such as their ages and the number of years that they were selling in the market. At the end of each interview each respondent was asked if there were any issues they deemed important that had not been discussed. The interactions were done in a relaxed atmosphere and the conversations between me and the respondents were recorded with their prior consent. Interestingly, some of the respondents that I interviewed in the market convinced me to buy some of their goods at the end of the interview, which I complied in order to reciprocate them for their time and cooperation.

### **3.5.2. Interview with Environmental Health Official**

The interview with the Municipal Environmental Health official provided an overview of the current environmental sanitation situation in the Hohoe market; enforcement of environmental regulations and by-laws, policy interventions as well as strategies to manage environmental sanitation in the market. More importantly, he helped explain the political and economic issues affecting the Assembly’s environmental sanitation

management strategies and the measures put in place to keep the market clean as much as possible. Although my appointment with him was verbal, he accepted it with a little hesitation. According to him, he was not ready to give any information on sanitation to anybody because, someone came for similar information some time ago, and put it on air. But I was able to convince him that the information was meant for academic purpose only and assured him of confidentiality and anonymity in the use of information that he would provide. I wrote the responses because my audio recorder stopped functioning a few days to the interview with him. He gave me the opportunity to call him on phone if I needed further clarifications from him and this I did when the need arose.

### **3.5.3. Interview with Zoomlion Official**

I decided to interview the Zoomlion official when the Environmental Health Official could not give me certain information that I needed. Just like the Environmental Health Official, I booked a verbal appointment with him which he readily agreed. He provided me with information on the roles that Zoomlion is playing towards sanitation in the Hohoe main market in particular and the Township in general.

### **3.6. Field observation**

Observations are a form of evidence that do not depend on verbal behaviour, and the method enables the investigator to observe the phenomenon under study directly (Yin, 1982; cited in Baabereyir, 2009:128). In addition to interviews, I also conducted non-participant field observation as part of the data collection exercise. This involved direct observation of sanitation practices by traders in the market. I used observation because it had the potential to give me insights into what the traders were actually doing rather

than what they said they were doing or what they thought they were doing. Waste disposal sites, urinal and toilet facilities were also observed to gather data on such things as standard of maintenance of these places and how often these facilities are patronized by traders each day. In the course of the observation I wrote in my field notes descriptions of incidents and activities and also took photographs of heaped waste around places where foodstuffs are sold and drains filled with solid waste. Figures 3.1 and 3.2 show some of the heaped garbage I observed at market during my time of collecting data.



**Figures 3.1 & 3.2: Heaped garbage close to where foodstuffs are sold.**

Source: Fieldwork, February, 2014

The field observations undertaken to collect data for this study were non-participant observation. The observations enabled me to gain first-hand knowledge of the traders' ways of dealing with wastes (both solid and liquid) in the market. Since the observations mainly covered human actions and not the effects of human actions, the reactive actions of traders were much concentrated on. Even where the observations covered human actions such as traders heaping refuse close to where they were selling



their goods or throwing solid waste into drains, they were unaware of the observation although there were some exceptions where I drew the attention of some of the respondents to some of the actions that I observed.

### **3.7. Data Analysis**

Regardless of the chosen paradigm or methodology, data analysis is the process of making meaning from collected data. Qualitative data was gathered for the study using interview and field observation. The data from interviews conducted with the respondents were analyzed simultaneously with data collection. Qualitative analysis according to Bogdan and Biklen (1982) involves “working with data, organizing them, breaking them into manageable units, synthesizing them, searching for patterns, discovering what is important and what is to be learned, and deciding what you will tell others” (p. 145) Once data was collected through individual interviews, audiotapes were transcribed and transferred from spoken to written word to facilitate analysis once I returned home. All interviews were transcribed from Ewe to English after listening to the tape several times. The transcribing was time consuming as each interview took an average of seven hours to transcribe.

The themes began to emerge with the initial reading of each transcript and the coding was done manually. While listening to the recorded interview, I took note of specific words and phrases and made notes on them. I coded every single piece of data regardless of its importance and relevance to the subject that I was exploring, knowing that I would organize the codes into categories later. I compiled all the open codes (words and phrases) from the interviews and removed all duplications to make a list of codes and looked for any overlapping or similar categories. The purpose of coding was to acquire new understanding of a phenomenon of interest and also describe the



phenomenon. I then refined and reduced these categories by grouping them together into similar patterns, looking for dominant themes, common threads and contradictions.



## **CHAPTER FOUR**

### **RESULTS/ FINDINGS**

#### **4.0. Introduction**

This chapter presents the results of analyses of the response made during the interview with the traders. The analysis covers the extent to which traders were aware of environmental sanitation at the market, the behaviour of traders towards sanitation at the market and waste management strategies put in place at the market. All the data collected were analyzed based on the objectives and research questions raised in the study. Five themes were identified within the data collected, these were:

- (1) Awareness of environmental sanitation
- (2) Insecurity in the Market
- (3) How traders feel about poor sanitation in the Market
- (4) Effects of poor sanitation on trading activities
- (5) Clean up strategies in the Market.

#### **4.1. Demographic characteristics of traders**

Out of the 25 traders interviewed, 17 were females (68%) and 8 were males (32%). Their ages ranged between 21 and 62 years with majority of them (56%) in the range of 25 and 38 years. The rest of the respondents identified themselves between the ages of 39 to 45 years (20%), 18 to 24 years (16%) and 46 to 62 years (8%). Regarding marriage, 9 (36%) were married, 8 (32%) were single and the rest 8 (32%) were identified to be divorced. On the question of their educational level, 3(12%) of the respondents said they completed primary school, 2 (8%) completed middle school

while 11 (44%) completed junior high school, 3 (12%) had secondary education and 6 (24%) did not have any formal education.

Out of the 25 respondents, 1 (4%) has been selling in the Market for less than one year, the rest of the respondents have been selling in the Market between 2 and 36 years. Five of them (20%) have been selling between 2 and 3 years, 11 (44%) have been selling between 4 and 6 years and 8 (32%) have been selling between 7 and 36 years.

Table 1 below shows a summary of the demographic information from respondents.

**Table 1. Demographic summary for respondents**

Demographic Characteristics	Frequency	Percentage
<b>Gender</b>		
Female	17	68
Male	8	32
<b>Age (years)</b>		
18- 24	4	16
25- 31	9	36
32- 38	5	20
39- 45	5	20
46 and above	2	8
<b>Marital status</b>		
Single	8	32
Married	9	36
Divorce	8	32

**Education**

No education	6	24
Primary	3	12
Middle	2	8
JHS	11	44
Secondary	3	12

**Years of trading**

Less than 1 yr.	1	4
2- 3	5	20
4-6	11	44
7 and above	8	32

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**4.2. Awareness of environmental sanitation**

The interview with participants revealed that traders were very much aware of environmental sanitation. All the participants agreed that during their daily activities in the market, they contributed to the accumulation of waste in the market. Three of the respondents admitted that the market is dirty because of their trading activities, and if they were not to be trading, the market would not have been so dirty. One of respondents stated:

The amount of waste we produce in the market anytime we come to trade is too much. But we cannot be totally blamed because the place where they have placed the refuse container is too far from some of us; some of us have to leave our goods and walk a few metres to dispose of the waste we have created. It's

sometimes difficult to leave your goods while customers come to buy, you may not be able to make the daily sale or even end up losing your customers to other traders.

Four other respondents also raised similar concerns when they said that waste generation goes alongside their trading activities and therefore could not be separated from one another. According to them, they were very much aware of the extent of littering they have been doing in the market but it was also somebody's responsibility to clean it.

According to two of the shop keepers I interviewed, the major waste they generate is cardboard boxes which are most often collected and reused by other people. As a result, much of the waste generated by store keepers are reused by others and this helps to reduce the quantity of waste they (store keepers) generate.

Two of the respondents who were the eldest among the participants told me about how the market was kept clean when they were accompanying their mothers to the market. This was how one expressed herself:

The market was then small and only few traders were around, including my mother, and I was always asked to sweep where we were selling before and after the day's trading activities. Anyway, the market was small and only few people were buying from here because there were other smaller markets in the town where people were trading. The waste generated at that time was small, rubber bags were also not common and so the market was always clean.

The other participant also described the type of waste at that time as "leaves and paper which we were collecting and dumping it at the communal site to be burnt. The number of traders and customers at that time was small so waste was not an eyesore in the

market as we are seeing today”

Another participant also described the communal dumping site as an eyesore. According to him, the waste always overflowed the containers and the surroundings become unbearable because the stench that comes out would not allow traders who are close to the dumping site to go about their trading activities smoothly. He said “those responsible for transporting the waste to its final destination fail to do it...they end up polluting those of us selling a few metres from it by burning it”. The situation, according to him, becomes worse anytime it rains, attracting flies around some of them who are selling a few metres away.

My observation confirmed what the traders said about over-flowing waste containers when I visited the communal dump site on one occasion without the containers being emptied for days, the waste was burnt near the containers with its accompanied smoke polluting the surroundings. The Environmental Health Officer said the cleaning of the market was done by the Municipal Assembly while lifting of the containers and cleaning of the drains were done by Zoomlion. According to him, the sweeping and transporting of the waste to its final disposal site were scheduled to be done daily but inadequate staff and vehicles made it impossible to keep to the schedules. This, as he said, led to the accumulation of waste in the market and the communal dump sites. He, however, revealed that the situation was improving.

Interviews with the traders and my own observations showed that waste generated in the market by traders included foodstuffs waste, rotten vegetables, polythene, paper and cardboards. Furthermore, the trading activities in the market generated enormous amount of solid waste which litter the market heavily. Without any regard for environmental sanitation, sellers and buyers alike adopted the “throw-it-where-you-

like” attitude resulting in heavy littering of the market. Observations also showed that in spite of the enormous quantities of waste generated in the market, only one container was provided at a time at the communal dump site for the traders and it most often overflows. It was placed at the outskirts of the market where the old public toilet was sited. The distance from the traders to the dump site is between 20 and 950 metres and the traders were supposed to carry the waste generated from their trading activities to the containers at the end of the trading but many failed to do this and left the waste at the point of generation. This assertion was corroborated by the Environmental Health Official who said that there were times that the Assembly was facing logistics and financial constraints which affected their operations. According to him, under such situations the workers refused to clean the market forcing the traders to sweep and heap the rubbish close to their wares and cover it with rubber before they started selling. A few weeks after interviewing the Environmental Health Official, I paid the usual visit to the market and met such situations where heaps of garbage were covered with rubber close to traders’ wares. Upon enquiries from some of my respondents, this was what one of them said: “They say the staff of the Assembly are on strike since last week, so they are not cleaning the market for us”

Two sachet water sellers also seemed to express their disappointment at the manner in which the Municipal Assembly was handling sanitation issues in the town and the market in particular. They do not sell at one place and therefore have a wider knowledge about environmental sanitation in the Hohoe town. One of them described her dissatisfaction as follows:

We the ice water sellers are always blamed for littering the whole town, the gutters and everywhere. If the Assembly had placed litter bins at vantage points in the town and the

market, those who buy water will put the rubber in the litter bins. Because there are no litter bins we (sellers and buyers) leave the rubber anywhere and they are carried by rain water into gutters. The other day when it rained, the gutter close to the vegetable sellers got choked with sticks, leaves and various types of rubber. It was ice water rubber that formed the major waste floating on the water. Sometimes it overflows the gutter and displaces traders who sell close to it (the gutter). Who doesn't like good thing? We all like good things and therefore it is the wish of all of us that the market is kept clean but the Assembly has let us down.

Although majority of the respondents seemed to express disappointment at the labourers of the Municipal Assembly's handling of sanitation in the market, all of them felt dumping of solid waste in storm drains was one of the worst behaviours traders would exhibit. According to them, the solid wastes block the waste water from flowing thereby making the water to become stagnant and smelly. Three of the women who sell a few metres from the main gutter said that the stench that comes from the gutter sometimes makes it difficult for them to sell. One of them recalled an occasion in which she had to cover her nose throughout the day. She described the situation by saying, "somewhere last year, the gutter was so choked that the water was not flowing, and there was no rain to wash the garbage too. The whole area was smelling so badly that both traders and customers were complaining"

Another trader stated "the gutter is clean when it rains heavily. You will scarcely see Zoomlion workers cleaning the gutters, we suffer as a result of the stench, especially when it is not raining". She indicated that this sometimes affected her sales because customers found it difficult to patronize goods close to this area because of the stench coming out of the gutter and she believed other traders might also be affected.



Six traders spoke about the fact that the Assembly's failure to provide litter bins at vantage points did not mean they (traders) should dump solid waste into drains. Comments from four of them included statements like: "it is a disgrace to trading activities in the market", "it is an eyesore", "it is a shame", "it drives away customers" and "offenders should be severely dealt with".

My observation of the drains confirmed what the traders said about cleaning of the drains. Throughout the six weeks that I visited the market during the research period, it was only on two occasions that I saw signs of cleaning one of the drains. Although I did not see the sweeper personally, I asked one of the chop bar operators who told me that it was the one who was responsible for cleaning the area. The drain in question is behind the chop bars which are located between the lorry park and the market. It is an open drain in which left over food such as fufu, banku and soup were poured by the chop bar operators. However, by the time I completed the research, it was covered with slabs as part of reconstruction of the lorry park and a new water closet toilet (figure 4.1). The main drain, which is about 2 metres wide (figures 4.2 & 4.3), never saw any cleaning throughout my research. It was filled with solid waste, such as polythene bags, leaves and pieces of paper. Other things were broken concrete, bottles, paper cartons, rotten vegetables and growing weeds at certain portions. But when the rains started, some of these things were washed away, which was an indication that the drain becomes clean only after heavy downpour.



**Figure 4.1: Covered drain behind chop bars and part of the fence around the market**

Source: Fieldwork, November, 2014

When I asked the Zoomlion official why their workers were not cleaning the drains in the market, he said, they were formerly contracted by the Assembly to clean the entire market, including the drains and the lorry park. But the Assembly realized that their (Assembly's) labourers working under the EHSD of the Assembly were not doing any work so the cleaning of the market, including the big drain, and the lorry park was taken over by the Assembly. His response contradicted what the Environmental Health Official told me concerning the cleaning of the drains in the market by Zoomlion. According to him, Zoomlion was cleaning only the streets around the market and the station. He lamented on the failure of the Assembly to clean the drains and their delay

in cleaning the market regularly and on time. He even suggested that if the labourers would not clean the drain, then it should be covered to prevent open dumping of solid waste in order to prevent the outbreak of an epidemic. Figures 4.2 and 4.3 shows weeds and solid waste at various locations in the storm drain.



Figures 4.2 & 4.3: Solid waste dumped in open storm drains

Source: Fieldwork, February, 2014

Unlike the waste and muddy situations which the respondents showed their disappointment at the Assembly, majority of them were satisfied with the water closet toilet and urinal facilities. According to them, the construction of these new toilets and urinals is the best project the Assembly has undertaken in the market in recent time.

This is how one of them describes it:

The toilets and urinals were nothing to talk about at all. Look, one day, my stomach was disturbing me and I had to go to toilet. I was shocked when I entered. Could you believe that I didn't know how I (excuse me) defecated and left the room? Ever since, I have never visited that place until this new one was constructed. I visited the new one a week after it was commissioned, it's very neat... The only problem I have is the distance from here (her selling place) to that place...the price is okay only if they will continue to keep the place clean.

Another respondent also corroborated this observation by saying that: “I’m happy that new toilets and urinals have been constructed in the market. The old urinal is too close to where we are selling. Although the new one is far from us, we like it because the old one was smelling too much”. One tomato seller said that they were sometimes finding it difficult to stay there and sell because of the stench that was coming out from the urinal and the drain.

On the contrary, 2 chop bar operators, although appreciated the construction of the new toilet, which is close to the chop bar (figure 4.4) were not enthused about it because the old KVIP toilet was still in operation. They were very sentimental because, according to them, the stench that was coming out sometimes got to where they were selling when the wind blew in their direction. As one of them said: “although we are a bit far from the old toilet (about 100 metres), strong wind towards our direction brings the bad smell here and we the sellers and the customers complain anytime it happens. I feel embarrassed anytime customers complain”.

My observations of the two places of convenience (the old and new) confirmed what the respondents said. The new ones were well tiled and fixed with water closet, urinals and bath houses were attached. But the KVIP, which was the old one, was a no-go area because it was exuding an unbearable stench into the surrounding environment. When I engaged the attendant in a conversation, it came to light that people were still patronizing it because of its cheap rate (20 pesewas) and that of the new one was 50 pesewas. Walking from the toilet towards the chop bars I could smell the stench coming from the KVIP up to about 70 metres. It therefore means that when strong winds blow towards that direction, the stench could get to the chop bars. One of the



respondents who owns a shop a few metres from the KVIP, had this to say: “although the Assembly has taken steps to build toilets that we can flush with water, they have to speed up the construction of another one because the scent that is coming out from the old one is unbearable...those of us selling here are suffering”.

In the interview with Mr. Yevu on plans towards the KVIP, he said they were planning to close all KVIP toilets in the Hohoe Township including the one in the market. According to him, the KVIP in the market would soon be closed down because the newly constructed water closet was close to it and the stench from it was getting worse.



**Figure 4.4: Water closet toilet close to the chop bars**

Source: Fieldwork, March, 2014

### **4.3. Insecurity in the Market**

A pattern identified among the interviews of the traders was the concerns expressed about the poor sanitation situation in the market due to the absence of certain facilities. The traders expressed concern about security situation in the market, absence of litter

bins, lack of stores, failure to cement or lay pavement blocks on the walkways and inadequate sheds for traders.

Almost all the traders lamented on the insecurity situation in the market; they complained about failure on the part of the Assembly to fix gates around the market. The traders wondered why the Assembly would not protect the market from intruders who use it for their nefarious activities in the night. As one of them put it: “in the night people use this place as hotel, smoke wee and defecate indiscriminately around this place for us to come and clean the next day”. Another respondent, who had been selling in the market for over six years also had this to say: “because of the open nature of the market, people were bringing refuse from their homes in the night and dumping it in the litter bins that were provided in the market. Some were even dumping it in the big gutter or any place they thought was convenient for them”. When I probed further to find out which litter bins she was referring to, it came to light that the Assembly provided litter bins at vantage points in the market to be used by both customers and traders in order to reduce littering. But because of the nefarious activities in the night by people who lived around the market, the Assembly decided to remove all the bins from the market.

Eleven of the respondents (fish and vegetable sellers) complained bitterly about how the Assembly’s failure to secure the market is affecting their trading. According to them, they could not keep their goods in the market overnight so they were forced to transport them to the market and back which adds to their cost of doing business. One of them lamented: “if the market were to be secured, I wouldn’t have been transporting my vegetables to the house every day at a high cost. I will only cover them and leave them here (under the shed)”. One fish seller, who was selling under an umbrella,

retorted: “if they had built stores attached to the sheds or secured the individual sheds without fencing the entire market, we would have been keeping our items there and be paying something small monthly. It will be cheaper than transporting the items to the house after each day’s sales”. What one trader said was that: “some of us are ready to pay extra money to the Assembly to provide better fence and gates so that we can be keeping some of our goods here. The market needs to be secured”

This assertions were confirmed by Mr. Yevu, who gave a vivid account of the efforts the Assembly has made towards securing the market during my interview with him. According to him, the market was fenced to prevent people from using it for their nefarious activities and protect some of the goods of the traders but it could not materialize because the Assembly, which has the responsibility of buying padlocks to lock the gates, failed to buy them. He went on to say that it was the responsibility of the Assembly to provide security in the market while the Environmental Health and Sanitation Department was responsible for sanitation in the whole Municipality including the Hohoe main market. Part of the answer was:

You can go to the market and check for yourself. Thieves have removed all the gates creating thoroughfare in the market. This is a headache to us as a department responsible for the maintenance of hygiene in markets and the entire Municipality. Although we do not charge any other fee apart from the toll that traders pay, we still try to maintain cleanliness in the Market but we are so much constrained by inadequate operational logistics (Mr. Yevu, Head of EHSD).

On the question of why litter bins have not been provided at vantage points in the market, this was what Mr Yevu said to corroborate the trader’s version:

Litter bins were provided some time ago. However, after few months, traders started complaining that people were bringing their refuse from

their homes and dumping it in the litter bins. The staff members working in the market also confirmed it so we decided to take all of them from the market because the purpose for which we introduced it was defeated.

This was corroborated by the Zoomlion official when I enquired from him about the provision of litter bins in the market, this was what he said:

The behaviour of the people is so disappointing that we have to collect all the litter bins from the station and the market. People dump toilet wrapped in polythene bags in the containers...some even defecate directly into the containers. I can't be asking elderly men and women to be cleaning faeces from containers anytime our workers come to empty the containers. It's not part of their work. We had no choice than to stop rendering such services to the public (Mr. Delali Owusu, Zoomlion Area Manager).

Mr. Yevu however assured me that they were working assiduously to achieve the best hygienic conditions in the market by putting measures in place to reinforce the fence wall and fix the gates to secure the market. According to him, if the market is protected, outsiders can no more fill the litter bins and this will help his department to monitor the waste situation in the market very effectively. On the question of why stores were not provided for the traders to enable them keep their wares in the market, this was what he said: "this question can best be answered by the Works Department of the Assembly but what I can say is that the Assembly is financially constrained which is making development of new projects including the entire market difficult". The Assembly, according to him, has lined up some projects to uplift the status of the market; these include construction of more sheds and laying of pavement blocks on the walkways to make movement in the market easy and also eliminate the presence of mud any time it rains. He explained further by saying that:



...the laying of pavement blocks at the lorry park that has just been completed by the Assembly took almost three years to complete, this is an indication of how constrained the Assembly is with regard to funds. It is our hope that things will improve for the Assembly to achieve these objectives. However, until that time, we cannot allow traders to be selling under unhygienic conditions, we will continue to do our best by educating them on the need to change their attitudes towards waste disposal in the market (Mr. Yevu, Head of EHSD).

I asked him about the efforts the Department was making towards environmental sanitation in the market and this was what he said:

...as I said earlier, till the standard of the market is raised to certain level such as fencing and laying of pavement blocks on the walkways, there is little we can do. But in the interim, we have asked all traders to sweep their surroundings after selling their goods. It is an offence not to sweep and anyone who fails to do so will be prosecuted.

According to him, the idea was to reduce the amount of waste in the market daily and also make it possible for their workers, who were very few, to be able to clean the market early before trading activities start. He admittedly said that the existing Hohoe Municipal Assembly Sanitation Bye-laws (2011) are not being enforced rigidly to make people conscious of the waste situations in their environment. Asked why they were not rigidly enforcing the bye-laws, his response was “in trying to enforce it people refer to us as being wicked and not showing sympathy on the poor traders...we are also understaffed making monitoring difficult for us because the market is large and the traders are many”. According to him, most of the traders close at a time that their staff have closed and gone home and therefore it will be difficult to monitor those who will not sweep before leaving for their various homes. He, however, said that they do not spare the recalcitrant traders who consistently failed to clean their surroundings.

My observations at the market confirmed the fence wall around the market and the supposed gates that were fixed. It came to light that the height of the fence was short which people could scale over and enter the market to do whatever they want to do and come out, others could also throw rubbish over the wall into the market. It was also observed that seven entrances were created and there were evidences of gates removed from the concrete pillars making the market insecure. Because of the failure to lock the gates, intruders, including mad men and women, have turned the market into their sleeping place where they do their nefarious activities and other people have also turned it into waste disposal site at night or early morning, a situation which contributed to accumulation of waste in the market, especially, on non-market days when most traders do not come to the market.

To make matters worse, there are no lights in the market to ward off some of these intruders. Another observation I made was that almost all the fish sellers (over 90%) do not have one permanent place where they sell, and there are others who are also not permanent traders in the market; where they sell on market days is different from where they sell on non-market days and others also sell on market days only. With this arrangement, monitoring of the traders becomes difficult because when they create waste on a market day, they either move to their second place of selling the following day or they go to other markets to trade. It will therefore be difficult to arrest offenders and punish them.



**Figure 4.5: Stalls without protection**      **Figure 4.6: an intruder sleeping on a trader's table**

Source: Fieldwork, March, 2014

#### **4.4. The feelings of traders towards environmental sanitation**

Most of the respondents interviewed shared negative sentiments with regard to environmental sanitation in the market. They lamented on the challenges they had with the general sanitation in the market. Out of the 25 respondents, 21 of them expressed their dissatisfaction with general sanitation in the market and put the blame at the doorstep of the staff of the Municipal Assembly, claiming that they pay market tolls to the Assembly which, according to them, should be used to clean the market for the traders. According to them, the Assembly has not been able to live up to its responsibility as the institution responsible for sanitation in the entire Municipality and this includes the markets. One of the traders who did not mince words described the Assembly as “the most useless institution in the Hohoe Township”. He noted, “They come to educate us on the consequences of poor sanitation, we fulfill our commitment by paying the toll they ask us to pay, yet they failed to clean the market for us as they made us to believe”.

One incident that a particular trader asserted, with certainty, was a point in time the labourers of the Assembly, responsible for cleaning the market, failed to sweep the market for almost two weeks creating heaps of rubbish at various places in the market. When asked what she did to keep her surroundings clean, she replied, “I engaged two boys to clean my surroundings for me before I started selling”. She went on to say that on one occasion, she did the sweeping herself because the boys were engaged by other traders, however, they came to collect the rubbish and sent it to the dumpsite. When I asked her why she did not send the rubbish to the dumpsite herself, this was what she said: “the distance from here to that place is far and you saw how I struggled to walk to and fro to arrange my wares. My knee is paining me”.

During the conversation with respondents, I gathered that most of the traders were not comfortable selling in unhygienic environment. According to six of them, the waste situation in the market is an eyesore and a disgrace to them as traders who are supposed to sell hygienic food to consumers. One of them said: “I sometimes feel ashamed when I have to sell close to heaps of waste... The distance from here to the waste dumpsite is far”. When I probed further to find out why she was feeling ashamed yet she was selling close to waste, she answered: “I arrive at the market at a time that goods begin to arrive because I don’t live in the town. ...if I want to sweep and go to throw the rubbish away, I may not get goods to buy and sell. But I sometimes pay the errand boys to do it for me”. Another one was so passionate when she said: “it is dangerous to our health; the food will be poisoned by these flies before customers come to buy...it is the same thing that we also eat. It’s only God that is protecting us”.

Three others also described the conditions as dangerous and if care is not taken and there is an outbreak of a disease, we would not be able to withstand it. According to

them, if there should be cholera outbreak for instance, they (them traders) and the consumers in Hohoe and its surrounding towns would be affected. When I asked each one of them whether such a situation had ever arose since they started trading in the market, they all answered in the negative. But, according to them, it is better for them to prevent such situations from occurring than wait for it to happen before we think of cure. This is how one of them described it:

Every time there is cholera outbreak in some parts of Accra and other cities, poor sanitation conditions in markets and other areas, refuse dumps and gutters flowing with dirty water are shown on TV. They are teaching us to keep our surroundings clean...if where we are selling is dirty, we will also face the same problem like those in Accra. So if it has never happened here it does not mean we should not do the right thing.

One other trader stated: “I know that the way some of our people handle waste in the market is not good. If we are not careful, we will not be able to control the consequences”. Further questioning showed that she was also part of those who rarely keep their surroundings clean, but according to her, it was not her wish to keep her surrounding dirty but it is because certain conditions have not been met by the Assembly which compel some of them to sell under unhygienic conditions.

On whether they would be prepared to pay more money for the Assembly to effectively tackle the sanitation problem confronting traders in the market, a few of the traders answered in the affirmative giving reasons why they would be ready to pay more towards the improvement of sanitation in the market. Some of the comments included: “I’m ready to pay if only the Assembly will use it for the work”, “why not, it is clean environment that we all want to be selling...it is not the wish of anybody to sell in dirt”, “I’m more than ready. But I don’t trust the Assembly to fulfill their promises

because they have failed us several times by not doing what they promised”. One of them explained the reason why she would pay any amount towards the improvement of sanitation by saying:

It is an opportunity some of us have been looking for due to the manner in which they are cleaning the market for us. I know that the Assembly can't do anything without money... If you go to the office of Zoomlion, all their tricycles have broken-down making their work ineffective... They have to employ more workers and pay them well so that they can do the work. They say 'it is good thing that money buys' so if we want the market to be clean, then we should also be ready to do what is expected of us by paying more.

One of the elderly traders also supported her position when she said that they, the traders, have to know that there is the need to keep their surroundings clean because that is what they do in their various homes. According to her,

We all clean our homes every morning before we do other things. Why won't we clean where we sell? Assuming we are working in offices, are we saying we will not sweep before we start work? If the Assembly decides that we should not pay any money and clean the market ourselves, I can't do it myself, I have to engage somebody and pay him or her so if the Assembly will collect money and do it, I will be happy. If we are asked to clean it ourselves, some of the traders will not... look at that (pointing at a heaped refuse). That is what you will see all over the market.

From the responses given by the respondents, it came to light that the Assembly has been educating the traders on the need to keep the market clean to prevent the outbreak of diseases. This programme was supported by the traders and therefore some of them felt the education coupled with the cleaning of the market could only be sustained if

they (traders) pay some money to the Assembly. According to one of them, “if there should be a disease outbreak in this market, it will not affect our customers alone, we will also be affected which will make it difficult for us to continue our trading activities”. Another trader stated

...cleaning of the market alone is not enough because some of our colleagues in the market are dirty, they don't care about where they sell...education can make them know the effects of selling in dirty surroundings. Without money it can't work so we have to support the Assembly by paying our levies in order to have a clean market to trade. This is our life.

During my interview with one of the respondents, I overheard one of the fish sellers shouting on top of her voice saying: “who is supposed to sweep here? The person must do that immediately because the place is too dirty”. I then asked the respondent what the fish seller meant by that statement and she told me that they (the traders) were sometimes doing rotational sweeping around their surrounding when the workers failed to sweep. It then meant that the one who was supposed to sweep on that day did not sweep that was why the fish seller wanted to find out the one who was supposed to sweep.

On the contrary, majority of the traders were not in favour of any additional payment to the Assembly. According to them, the market has never seen any improvement in the past few years in spite of the daily toll that they have been paying. Four of the men who are shop owners did not even want to hear about payment of money to the Municipal Assembly at all. Some of their comments were: “after paying high tax and daily toll, you expect me to pay extra money for the cleaning of the market. How much profit am I making to be paying all this money to the Assembly for some people to chop?”,



“...after which I sweep here myself? I will never support anything like that”, “unless the Assembly begins to show signs of improvement in their activities, I don’t think I will pay”. One of them narrated how he was prosecuted three years ago because his sales girl and boy failed to sweep the front of the shop before they opened the shop for business. According to him, they normally close late and therefore his workers sweep the surrounding the following morning. On that fateful day they were a bit late so customers were waiting to buy goods when they arrived and they decided to serve them before cleaning the surrounding. Unfortunately for them, they could not sweep before the Environmental Health Official came to arrest them for prosecution. This was his lamentation:

...being the owner of the shop, they called me and I had to go to the court and face the Magistrate. I was fined 60 Ghana cedis that day. It didn’t pain me that I was fined but what is paining me is the refusal of the Assembly to clean my surroundings although I also pay toll and tax like other traders in the market. My workers sweep anytime they come to work. ...you think I should pay more and continue to clean the place myself? Never, I will not pay.

When I wanted to find out from some of the respondents if they would be ready to do clean-up exercise through communal labour, majority of them, again, replied in the affirmative but questioned its feasibility. Some of them felt clean-up exercise will only be effective on market days where all or majority of the traders would be present. But they were quick to say that would be counterproductive because there was no way they would do clean-up exercise at the expense of trading. This is how one described it: “I can’t be doing clean-up exercise while my colleagues will be rushing to take delivery of tomatoes from the vehicle. I will not get anything to sell that day. ...why then do I come to the market?” Another trader who was very frank, said that although she would



support the idea, she was not living in Hohoe in order to participate in the clean-up exercise likewise other traders and for that reason communal clean-up exercise would not be possible. Other traders' comments were: "I'll do it but which day will they set aside which will be okay for all of us because some of us sell in other towns on their market days", it's a good thing to do but some of us come here on market days only so it will be difficult for us to do" and I wish there was something like that so that the dirt in the market will reduce but I don't think it can work".

Another trader also said that it was something they had already been doing in the Hohoe Township and she was always participating in it whenever it was organised. When I questioned her about where and how they had been organizing it, she said the first Thursday of every month is set aside for clean-up exercise in the Hohoe Township. According to her, it is mandatory that everybody cleans his or her house or business centre in the morning and shops and other business centres are allowed to open from 10.00 am, failure to do that one will face the law. My own observation showed that this laudable programme, which was introduced so many years ago, was no more effective because most people were no more participating in the clean-up exercise; they either lock up their shops or refuse to display their wares and stay at home until it is 10.00 am then they begin to open their shops or display their wares.

Another observation was that traders were not undertaking the clean-up exercise at the market but were either doing the normal sweeping or staying at home and come to the market after 10.00 am when the exercise is over. Most of the shops are not close to drains and therefore their owners are the worst offenders because the whole exercise has been understood as cleaning of drains only. So once there is no drain in front or around a shop to be cleaned, the owner refuses to come and undertake the clean-up

exercise. I also observed that some shop owners whose shops are close to drains, removed solid waste and sand from the drains and left it at the edge of the drains during the clean-up exercise. This rubbish is left for Zoomlion workers to come and clean and if they are not able to do it and it rains, the running water carries it back into the drains. The sad observation I made was the failure on the part of the traders and Zoomlion to clean the big drain that runs through the middle of the market during the clean-up exercise.

Further questioning showed that most of the traders were not in favour of the Assembly punishing offenders. They were of the view that the Assembly did not do much in solving sanitation problem in the market in order to have that moral right to punish offenders. This was what one of them said: “if the Assembly had provided us with litter bins in the corners in the market and somebody refuses to put litter in it but puts it on the ground, they will be right to do whatever they want with the person”. Another also remarked:

If the Assembly has been sweeping the market as they assured us and we don't do what is expected of us, then they can use the law against any offender. But in this case, their staff sweep here late or sometimes they don't sweep at all. Zoomlion workers start sweeping the streets 4.00 am, why can't they also sweep the market early for us?

When I enquire from her whether it would be possible for the workers to sweep the market at dawn, she then realized there was no light at the market to enable them work at dawn. But she insisted that they could come early enough to clean the market before trading activities began.

Two of the respondents who were all shop owners supported prosecution of offenders

to some extent when they said that one cannot sell under insanitary conditions. According to them, the Assembly has been educating them on the need to sell under hygienic conditions and therefore if someone fails to keep his or her surrounding clean, that person can be prosecuted to serve as deterrent to others. This is how one of them remarked: “although the Assembly has not been able to do what is expected of them, we the traders cannot be selling in filth and expect customers to buy. Because of that if someone does that he or she must be punished”. My observation of their surroundings showed that the space that they were supposed to sweep was about 5 metres in length and 3 metres in breadth and there was no gutter close to the shops which will demand cleaning. Again, the items they were selling were not generating much waste which would make them sweep every day.

#### **4.5. Effects of poor sanitation on sales**

Information gathered from majority of the traders indicated that poor sanitation in the market negatively affected their sales. The respondents lamented on the low patronage of their goods especially, whenever it rains because the whole market becomes muddy making movement very difficult for customers and their dresses get stained with muddy water. Most of the respondents do not have permanent structures and therefore suspend selling when it is raining or even pack their items and leave for home when the rain lasts longer than expected. One of the fish sellers shared some of her experiences:

Look at where I'm selling. When it is raining, I have to cover the fish with a big polythene and ran to the shed over there (pointing at a shed) till the rain stops. If it rains beyond 3 pm, then I have to pack and go home after the rain has stopped, but if it stops early for us to continue our activities, I wouldn't be able to sell here because water occupies all this area so I have to relocate, which is not easy because the market is already

choked with traders and my customers will also find it difficult to locate me. Even if the rain is not heavy, the surroundings become muddy and customers don't feel comfortable to come here and buy. I lose customers sometimes.

Another trader who was selling vegetables also narrated one of her bitter experiences as follows:

I have two white ladies who are no more patronizing my vegetables regularly as they used to do because of heaped garbage that they saw close to where I sell. It all happened that those cleaning the market failed to work for almost two weeks and we also had no option than to sweep and heap it around. On that day, I saw the two ladies at a distance coming towards our shed...I knew they were coming to me. The next thing I saw was that one of them was pointing at something on the ground and the other frowned her face. Thinking that they were coming to me, they just waved me and walked to another vegetable seller and bought whatever they wanted. Since then they have not been regular here because they have seen another seller.

When I enquired further as to what she thought was the reason for the ladies not buying from her on that day she said "I took a closer look at the heaped garbage and realized that there was a decomposing dead mouse and kenkey peels which were attracting a lot of flies"

One fish seller said that some people do not come to the market at all whenever it rains heavily unless it is very necessary. According to her, the dirty nature of the market whenever it rains discourages people, including traders themselves from coming to the market. This was how she described her situation: "on some market days when it rains and stops between 9am and 10am, I don't come to the market". When I enquired further to find out why, she said because the market would be muddy and dirty. This was how she put it:

They will not sweep the market because of the rain and if the papers and rubbers are not carried away by the rain water, they will be covered by sand. I have to pick them because they cannot be swept and this can take time. By the time you finish this and arrange your goods, it is 12.00 noon. How much goods will you sell before the close of day? I will rather sell it in the house.

One ice water seller who was selling her water by roaming the market showed her disappointment when she said:

One thing that is not good about my job is that I don't make sales whenever it rains. It is more serious in the market than other places because the ground is so muddy that walking becomes difficult. Sometimes I have to concentrate on areas where the grounds are a bit dry in order to make some sales. If the grounds are cemented, I can roam everywhere to sell.

These are few examples of dissatisfaction relating to environmental sanitation in the market. Other traders also voiced concerns about matters that involved issues relating to waste generation, dumping of solid waste in drains and general sanitation in the market. A pattern identified among the female traders was the concern for the future status of the market in terms of environmental sanitation. The concerns of the women usually came in the form of references to some markets in Accra where walkways have been cemented or pavement blocks laid on them (walkways) and litter bins placed at vantage positions in the markets. Although they were of the view that sanitation in those markets were not the best, they believed they were far better than that of Hohoe market. This was how one of them expressed her sentiments:

Take a look around the market and tell me if the Assembly has any future plans for us. I wish you were here after a heavy downpour to see how muddy the market will be, littered with plastic bags, paper and

rotten vegetables. Those of us selling under umbrellas are the worse victims because we cannot sell when it is raining, especially, when it is windy. We have to hide under the sheds which are already fully occupied, and if the rain does not stop early then there wouldn't be any sales for us that day. I believe you have been to Makola Number One market in Accra? Do they walk in the sand or mud? Although they also have problem with waste, theirs is far better than ours here.



**Figures 4.7 & 4.8: Walkways without pavement blocks.**

Source: Fieldwork, March, 2014

Their male counterparts, incidentally, were all selling in stores. Unlike the women who complained bitterly about the cleaning of the market, the men complained more of the dust that was affecting their health and the quality of their goods. My observation also showed that the dusty road was affecting the traders anytime a vehicle passed, unless it rained. One of them even covered his nose when I went there to interview him because it was a market day and vehicles were plying the road at regular intervals making it very difficult to breathe or see. Items in the various stores that I visited during the interview were covered with brown dust; storekeepers were forced to buy large polythene to cover some of the items.

To the question of whether there has ever been an outbreak of a disease in the market, all the respondents replied in the negative. When I probed further to find out whether poor sanitation conditions in the market affect their health, they all replied in the negative. All the respondents said that although they fall sick like any other human being, their sicknesses cannot be attributed to the insanitary conditions in the market. These are some of the statements of the respondents: “I’m sometimes attacked by malaria, but it is not surprising”, “I know dirty surroundings can breed flies but I don’t think the diseases that attack me come from here”, “I sometimes experience diarrhoea but it is not because the market is dirty. Every human being experiences it once a while” and “sickness is a natural thing”.

#### **4.6. Clean up strategies in the Market.**

Majority of respondents shared negative sentiments with regards to the strategies adopted to clean the Market. Almost all the respondents stated that the various strategies adopted by the Assembly were not helpful and the strategies were generally described as “ineffective”. According to them, the Assembly contracted Zoomlion to be cleaning the drains in the market and the labourers of the Assembly were sweeping the entire market and the lorry park. I tried to find out from them why they felt the clean-up strategies were ineffective, this was what one of them said; “the workers don’t sweep early for us to display our wares. They sometimes don’t come”. Another said: “the work of the cleaners only show on non-market days when most of the traders don’t come to the market... they don’t come early on market days”. When I again enquired whether they were made to pay for these services, they all replied in the negative.

The EHSD of the Municipal Assembly has been tasked with the overall management of solid and liquid waste in the market. The strategies that the Department adopted in



cleaning the market has never been successful making traders to often complain of unsatisfactory or unreliable services. It came to light that the people who were contracted to clean the market were not living up to expectation because they were not giving the traders the needed waste cleaning services. The sweeping is supposed to be done daily by labourers of the waste department who use long brooms to gather the waste and into heaps. These heaps are collected by the sweepers and sent to the dumpsite for onward transportation to *Gbi Wegbe*, the new landfill site.

Chop bar operators, from my observations, do not depend on these labourers because they ask their salesgirls to do the sweeping and dispose of the waste at the communal dumpsite. When I asked one of the chop bar operators why her girls have been sweeping instead of the workers from the Assembly, she said;

Those who are supposed to sweep here do not come on time. We start cooking early morning before 6:00 am so we can't wait for them to come and sweep before we start cooking. We can't cook in the dirt so I ask the girls, who normally sleep here, to sweep every morning before they start work. They empty the litter bin two or three times every day before close of work.

Further observations showed that the containers used as litter bins by the chop bar operators contained both solid and liquid waste. This comprised leftover food (banku and fufu) and soup which cannot be taken to the communal dumpsite and therefore is poured in the drain behind the chop bars. As indicated earlier, this drain has been covered with slabs yet they continue to pour the waste into it through the small openings between each slab. My observation showed that food particles and plastic bags have blocked the free flow of the waste water in the drain because of the inability of the cleaners to clean it as they used to do when it was not covered. Some livestock



famers sometimes come for cassava and plantain peels and the leftover foods to feed their goats, sheep and pigs. Interactions with the head of the department, Mr. Yevu, the Environmental Health Officer, revealed that the department was not well resourced to carry out effective supervisory role on the waste and sanitation service providers in the market. According to him, there are Environmental Health Officers detailed from the EHSD to conduct routine sanitary inspections in the market. The Assembly engages attendants at the communal dumpsite to manage the site; see to it that people dump the rubbish in the container and also clean the sites whenever the container overflows. The Assembly also engages attendants at the public toilets, urinal and the bathhouses to collect fees and clean these places. Zoomlion, according to him, is responsible for cleaning the streets and drains in the market while the staff of the Assembly are engaged to sweep and collect rubbish from the entire market. My observation at the communal dumpsite showed that only one container was placed there where everybody including residents living close to the market should use. However, it is replaced anytime it is full, lifted and transported to the landfill site at *Gbi Wegbe* by Zoomlion. The replacement is not regular causing the container to overflow, sometimes for days.

According to the official from Zoomlion, when their vehicle breaks down, mechanics have to come from Ho to fix the problem and this takes days thereby making it impossible for them to work during those days. According to him, they are now liaising with the Hohoe, Jasikan and Kpando Assemblies to release their trucks to them anytime their vehicle breaks down and this arrangement has drastically reduced the overflow of the container.

Further information gathered from Mr. Yevu confirmed what the traders said about non-payment of extra levy for waste management services. According to him, apart

from the toll that traders pay, they do not pay any other levy at the dumpsite. He however said that 20 pesewas is charged at dumpsites that are located at other parts of the town but they are now considering increasing it by the end of November, 2014 because waste management cannot be sustained without resources. When I asked why it has taken them so long, this was what he said:

We deliberated on this sometime ago but the information we gathered indicated that it will not succeed. People will deliberately throw their rubbish at any obscure place in the night, littering the entire environment so we suspended it. But the way things are going, we have no option than to increase it (Mr. Yevu, Head of EHSD).

Inadequate allocation of resources is affecting the operations of the Assembly in regards to waste management. Among the problems that the Assembly is facing are their inability to pay the contractor (Zoomlion) promptly and employ enough personnel to clean and monitor general environmental sanitation in the market. This situation affects the operations of Zoomlion and makes them unable to collect and transport the waste to the land field site on regular basis, although there has been some improvement in recent times.

My own observation showed that anytime the vehicles break down there is dire environmental conditions around the surrounding area. The containers occasionally overflow and cause visual intrusion, with stench coming out from the rubbish and wind blowing solid waste materials in the direction of traders. In February, 2014, the labourers of the Assembly went on strike for over two weeks without sweeping the market. This action caused the entire market to be engulfed in filth to the extent that the traders could also not do much than to sweep their immediate surroundings and heap it at empty spaces before starting their trading activities. The entire market was an

eyesore during that period of the strike. When I took the photographer there to take the pictures, nobody was in support of what we were doing so they started asking questions about why we were taking the pictures. I overheard some of them say: “they are going to show us on TV again”.

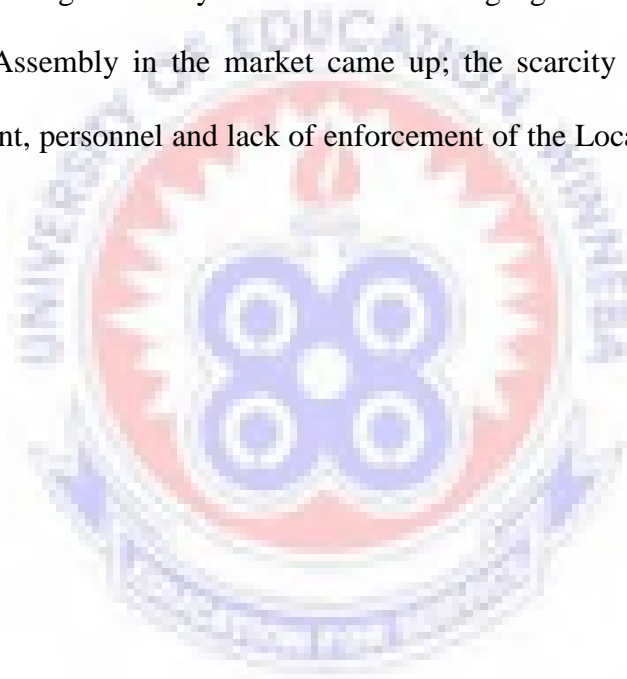
With this information, I later on went back to some of the respondents to find out more about what I heard. According to one of them, similar situations occurred two years ago when the labourers went on strike and reporters came to take pictures of the heaped rubbish in the market and the communal dumpsite and took it to GTV to be shown during their news broadcast. She went on to say that that news item was the topic for discussion in the market for several days because it was a shame to them. Another respondent also confirmed the news item but said that she did not see it herself but a supplier called her from Akatsi and asked her if that was the way they (Hohoe traders) were selling in filth. This is how she described her reaction: “I felt ashamed when she told me this because it means a lot of people have seen it in the whole of Ghana”. According to her, it was a disgrace to all of them so she believed that might be the reason why the traders did not want the pictures to be taken.



**Figures 4.9 & 4.10: Heaped garbage close to where foodstuffs are sold.**

Source. Fieldwork, February, 2014

The analysis has revealed a number of related factors to be responsible for poor environmental sanitation in the Hohoe market and the traders' attitudes towards these poor conditions. The themes that emerged included traders' awareness of environmental sanitation and insecurity in the market. These included failure on the part of the Assembly to secure the market; there was no gate to prevent intruders from dumping refuse there in the night, there was neither security man nor light around the market. How traders felt ashamed of themselves selling under unhygienic conditions also emerged during the analysis. Factors militating against the waste management efforts of the Assembly in the market came up; the scarcity of resources including funds, equipment, personnel and lack of enforcement of the Local Government by-laws on sanitation.



## CHAPTER FIVE

### DISCUSSION

#### 5.0. Introduction

In line with the study's objectives, this chapter discusses the findings related to the study of traders' attitudes towards environmental sanitation. The discussion is based on syntheses of the findings, assertions of the literature, the research questions and the objectives of the thesis. These findings are discussed based on the research questions under the following themes: environmental sanitation awareness, causes of poor environmental sanitation problem, effects of poor sanitation on trading activities and attitudes of traders towards poor sanitation in the Market.

#### 5.1. Environmental sanitation awareness among traders

In line with Wertz (1976), Grossman (1995)), Sood (2004) and Bandara, Hettiaratchi, Wirasinghe & Pilapiiya (2007), quantities of waste generated are proportional to the population. The findings revealed that the traders acknowledged the amount of waste that they create in the market is increasing over the years due to the continuous increase in the number of traders. It is evident that the increasing number of traders and customers at the market has contributed to mounting environmental problems such as poor sanitation and worsening solid waste situation which have become challenges to the Hohoe Municipal Assembly. This finding corroborates what Chazan (2002) found in a similar study he conducted on waste management in both developed and developing countries which was broadcast on Monday, March 4<sup>th</sup> 2002 on BBC News . Paradoxically, the traders' responses indicate that they do not take pride in the state of poor sanitation in the market yet they fail to take certain responsibilities in order to

reduce the amount of waste around their surroundings. Their responses again indicate that they were very much aware that they have a responsibility towards the cleaning of their surroundings before they start their daily activities yet they fail to do it as expected. This contradicts the norm-activation theory propounded by Schwartz (1968a, 1968b, 1970, 1977: cited in Staats & Wilke, 2007) which says that “a person’s behaviour depends on his or her awareness of consequences that are relevant with respect to the particular value orientation” (p. 65). The traders were aware of the adverse effects of insanitary conditions in the market yet they failed to develop appropriate personal norms that would have made them morally obliged to act in manners which are consistent with the norms. This can be attributed to failure on the part of the Municipal Assembly’s labourers, who have the responsibility of cleaning the market before traders start their daily activities and lack of support systems.

#### **5.1.1. Distance and time covered to dumpsite**

Although the traders would have wished to sell under hygienic conditions, their responses indicate that the distance from where they are selling to the communal dumpsite is a bit far; the shortest distance covered by the respondents is around 200 metres. Location of the dumpsite can be discouraging, considering the fact that these women have to sweep, heap, collect and carry it to the dumpsite, they may find it inconvenient to walk long distances and therefore decide to heap it a few metres from their goods. This study correlates Edmundson (1981) who stated in his study in Kumasi that refuse dumps are chosen without taking into consideration the distance to be covered by residents. It also supports Acheampong (2010) who said that disposal sites situated distance away from inhabitants or sellers discourages the people from making use of them. This action can lead to the spread of pathogens and the release of bad

odour which pollutes the surrounding air and subsequently, contaminates the foods that they are selling to the citizenry for consumption. My observation also showed that vegetable sellers and chop bar operators walk close to 800 metres to the dumpsite and therefore those who do not have errand girls or boys fail to carry the waste to the dumpsite unless they are ready to pay someone to do it for them.

Again, failure on the part of the Assembly to provide litter bins at vantage points in the market compels the traders to cover long distances before disposing of rubbish. Some of the traders also feel reluctant to cover this distance because it may affect the supply of goods that they will sell on that day; the vegetable sellers especially, most often, struggle for their goods from their suppliers when the vehicles arrive so the notion is that if they go to dispose of the rubbish they may not get their supply for that day when the vehicle arrives.

## **5.2. Causes of poor environmental sanitation problem in the study area**

The study identified four main factors to be responsible for the abysmal sanitation situation in the market. These factors are (1) insecurity in the market; (2) lack of litter bins in the market; (3) failure to lay pavement blocks on walkways and (4) lack of enforcement of existing regulations on sanitation.

### **5.2.1. Insecurity in the market**

The study revealed that insecurity is a contributing factor to the poor sanitation in the market. The failure by the Assembly to secure the market has given opportunity to intruders to dump refuse in the market during the night. As a result of the market being used as thoroughfare, people take advantage and enter the market to dump waste that they generate in their various homes thereby adding to the already accumulated waste



generated by traders. The waste is either wrapped in polythene bags and dumped in gutters and at open spaces or poured directly into the drains and open spaces. Others also defecate in the market expecting the traders to clean it before they start their daily businesses. This behaviour by these unscrupulous people has influenced, to some extent, traders' attitudes towards environmental sanitation in the market. Dumping of refuse in the market by other individuals is discouraging the traders from keeping the market clean as expected because it seems that while they are doing the right things, these intruders are also frustrating their efforts.

### **5.2.2. Absence of litter bins and irregular cleaning of the market**

Inadequate measures put in place by the Assembly to handle waste in the market also emerged as one of the causes of poor sanitation situation in the study. The findings indicate that absence of litter bins is another major reason for the unhygienic conditions in the market. The failure on the part of the Assembly to provide these containers has resulted in customers and traders littering the market because it is their responsibility to provide these facilities so that traders and customers will put waste paper, rubber and rotten vegetables in them. This situation promotes negative attitude of traders towards general sanitation in the market.

Again, the labourers sweeping the market are not living up to expectation resulting in both traders and customers complaining about poor sanitation in the study area. These labourers are supposed to clean the market before trading activities begin each day yet they fail to be regular and efficient. This can be, to some extent, attributed to inadequate resources including logistics, personnel and funds to pay the workers good salaries. This finding is in line with Baabereyir's study in Accra and Takoradi which noted that "limited funding of waste sector does not only make it impossible for waste



departments to employ enough professional staff but also hinders the recruitment of enough labourers to undertake regular cleaning of the street and market ground” (Baabereyir, 2009, p. 247).

### **5.2.3. Failure to lay pavement blocks on walkways**

Sanitation in the market during rainy seasons shows the extent to which the Assembly has less regard for general sanitation. Not a single walkway has been cemented or paved with blocks resulting in the ground becoming muddy and difficult to sweep. Solid waste that get stuck in the mud cannot be swept easily with broom unless they are picked with hands which most traders will not be ready to do. The absence of cement or pavement blocks on the walkways makes the market a no-go area whenever it rains; it becomes so muddy that one finds it difficult to walk, majority of the traders do not have sheds and therefore sell in the open spaces that are muddy and dirty. Water becomes stagnant at portions of the market after heavy downpour, creating breeding grounds for mosquitoes, bacteria and other disease causing pathogens which contaminate foods that are sold to the public. In the dry season also, the market becomes very dusty, especially, when wind blows and heavy dusts are carried along, polluting the foodstuffs that are sold.

### **5.2.4. Lack of enforcement of regulations on sanitation**

The inability of Municipal authority to enforce existing by-laws on sanitation results in general lack of respect for the law and ‘throw-it-where-you-like’ attitude towards waste disposal among those who patronize the market. This finding supports Sood (2004) in his study on waste management in Sierra Leone when he stated that the public at large is non-cooperative due to weak penalties for non-compliance. It also supports Ijaiya (2013), who notes in his findings that despite the environmental sanitation laws, Kwara

State is losing the battle against the consequences of waste and the attainment of clean environment.

There were indications that some of the officials were so free with the traders that they had sympathy on them whenever they committed an offence which merited punishment. It was therefore common to see traders and customers indiscriminately littering or dumping waste in open spaces and into gutters without regard for the law. This attitude created insanitary conditions in the market which attract bacteria and other disease causing pathogens. This can be attributed to the Assembly's lack of capacity in terms of logistics, personnel and the less attention given to sanitation cases in the court. Due to backlog of other cases which may be considered as 'more serious' cases which the court usually has to dispose of, less premium is given to sanitation cases in the court. As a result of this delay, the officials are discouraged from arresting offenders and taking them to court to be prosecuted. Moreover, the sanitary officers are not so free to be going to the court when the cases are always adjourned.

### **5.3. Effects of poor sanitation on sales**

The findings indicated that traders were negatively affected by poor sanitation in the market. Customers were conscious of the surroundings that they purchased food items because they know the consequences of buying food (cooked or raw) under unhygienic conditions. The waste that were heaped close to where foodstuffs were sold, the stench that was coming from the main drain and the KVIP toilet discouraged people from buying foods which were sold in unhygienic environment. These insanitary conditions provide breeding ground for flies and insects that spread diseases. It therefore implies that poor sanitation impacts negatively on economic activities of the traders; it leads to reduced income from customers and lost time in clearing heaps of garbage around areas

where the goods are sold. Additionally, sanitation also leads to time and effort losses due to distant or inadequate sanitation facilities.

Although all the respondents said there has never been an outbreak of any disease associated with sanitation and hygiene in the market, observation showed that the poor sanitation conditions could lead to diseases such as diarrhoea, malaria, typhoid fever and cholera. This could lead to financial and economic cost since traders may spend productive time going to the hospital for treatment or taking care of their sick relatives suffering from poor sanitation conditions. This study is in line with similar research in Kenya by Water and Sanitation Programme (2012) which states that US\$2.7 million is lost each year due to productive losses whilst sick or accessing healthcare.

#### **5.4. Attitudes of traders towards poor sanitation**

Issues of attitude appear to affect both traders and the authority regarding environmental sanitation in the market. The respondents indicated that issues such as traders' opinion on responsibilities for ensuring clean surroundings and disposal of waste had contributed to poor sanitation in the market. Further analysis of respondents' data revealed that since majority of the respondents were thinking that the Municipal Assembly was solely responsible for ensuring clean surroundings in the market, the traders supported clean up campaigns meant for making the surroundings clean. However, it was found that the traders were not committed to keeping the market clean. This finding is in line with Lounsbury and Tornatzky (1977) in their research on the relationship between people's attitude towards environmental quality and supporting behaviour. It also collaborates Jatau (2013) in his study in Jos said that in spite of various programmes to address issues of waste management, many Nigerians seem to possess low level of knowledge and negative waste management attitudes and

practices. I believe the traders adopted this attitude because they have never experienced the outbreak of any insanitary related disease in their lives. Experience, they say, is the best teacher. If they had ever experienced an outbreak of cholera as it was experienced between June and September 2014, in Ghana, where about 91 districts in eight out of the ten regions including Accra, were affected (Dzotsi, 2014), they would have changed their attitudes towards the insanitary conditions in the market.

The study also showed that the traders were sensitive to the garbage around them, especially, dumping of solid waste in drain and the stench around the trading vicinity. It was an indication of positive attitudes towards sanitation in the market. However, the degree of motivation required to perform the behaviour (joining the clean-up exercise team) was not put in place. As a result, their behaviour was at variance with their attitude because observation showed that they were not actively participating in clean-up exercise whenever it was organised. This finding lends itself to several findings in the literature which say that negative factors of attitude and culture have prevented in some cases the very important element of public participation (Yhedgo 1995; Palczynski 2002; Kaseva & Mbuligwe 2005; Rotich *et al.*, 2006). The people may have strong attitudes and be willing to keep the market clean but do not have the opportunity to actually do it.

The study again revealed that most of the traders were not satisfied with waste management in the market. Their argument is that the Assembly has not effectively implemented its measures put in place to keep the market clean. This finding is in line with Mobogunje (1999, cited in Jatau, 2013). According to his study, most of the wastes generated were not removed by the local government although citizens clean their immediate environment. The traders had negative impressions about the

Assembly for failing to implement the mandate given to it by the 1992 Constitution of Ghana to develop the Municipality in general and the Hohoe main market in particular and this has led to the traders' lukewarm attitudes towards sanitation in the market.

According to the findings, the failure of the Assembly to secure the market and protect it from intruders, its refusal to provide litter bins at vantage positions and irregular cleaning of the market by the labourers could be attributed to the reasons for the negative attitudes of the traders towards sanitation. The traders felt disappointed when they were trying to make efforts to keep the market clean while the Assembly was not able to fulfil its part of the obligations; they could not prevent people from defecating and throwing rubbish in the market at night and their labourers were not regularly and punctually cleaning the market. If the Assembly had placed litter bins at vantage positions in the market, traders would have discontinued littering and make use of the litter bins in order to reduce waste in open spaces. Another fundamental problem for which the Assembly is not able to fulfil its oversight responsibility in the market is inadequate resources (financial and personnel). The limited funding does not make it possible for the Environmental Health Department to employ more labourers and sanitary inspectors. For this reason, the labourers do not do effective and efficient cleaning and the sanitary inspectors also do not enforce the bye-laws to compel the traders to comply with the sanitation laws by keeping the market clean. Also, traders are supposed to sweep their surroundings after their daily sales but they refused to comply because sanitary inspectors fail to let the sanitation bye-law bite thereby compounding the solid waste problem in the market. Another reason why the traders were not sweeping the market after close of their trading activities was that there was no light in the market and most of them used to close between 5.30 and 6.00 pm.

The findings again identified ignorance and irresponsibility as some of the detrimental factors in waste management among the traders although they were regularly educated on the need to keep their surroundings clean and their responses seemed to be positive. Most of the traders were still ignorant of the value of maintaining good sanitation in the market and its importance to their social and economic well-being. As a result of this, they did not give priority to cleaning the market before starting their trading activities but always expected the labourers to do it for them. This ignorance may be a result of the absence of an epidemic emanating from insanitary conditions in the market. They have therefore taken for granted issues pertaining to hygiene.



## CHAPTER SIX

### SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

#### 6.0. Introduction

The current study set out to investigate the attitudes of traders towards poor sanitation at Hohoe main market and was guided by four objectives which were:

- To ascertain the level of awareness of traders of the environmental sanitation at the Hohoe main market;
- To describe the attitudes of traders towards environmental sanitation in the market;
- To identify the factors that influence traders' attitudes towards waste disposal in the market, and
- To assess the waste management strategies in the Hohoe market.

#### 6.1. Summary of findings

The summary of the research findings are based on the four objectives (stated above) that guided the study. In keeping with what other researchers have found about environmental sanitation awareness around the world, this study also came out with the following findings:

- The traders in the Hohoe main market were aware of the poor sanitation situation in the market. They were aware of the accumulation of solid waste at open spaces in the market and in drains thereby preventing the free flow of waste water leading to breeding of mosquitoes and other disease causing

pathogens;

- The attitudes of traders towards general sanitation in the market, according to the study, were positive. It shows the clear mindset of the traders towards issues of sanitation in the market. Their attitudes could be more favourable if they had been provided with the support system;
- Most of the respondents were not satisfied with the management of waste in the market. The Municipal Assembly failed to provide the support systems which would have made it possible for the traders to comply with the bye-laws on sanitation. Its labourers were not regular and punctual in cleaning the market before trading activities began, they were not cleaning the only big drain in the market and the Assembly also failed to secure the market and provide litter bins to be used by both traders and customers and lastly,
- The Assembly failed to enforce its bye-laws on sanitation making traders to litter and trade in filthy environment with impunity.

## **6.2. Conclusions**

Environmental concern shown by the traders towards insanitary conditions in the market was very high but they failed to take steps to improve the insanitary conditions despite the various education given to them on the effects of poor sanitation on people and the need to keep their surroundings clean. All the respondents agreed that they were responsible for the creation of waste in the surrounding environment where their commercial activities were taking place. Increase in population for that matter commercial activities, has been the major cause of accumulated waste in the market.

They did not take lessons from the outbreak of cholera in some parts of Ghana, including some towns in the Hohoe Municipality. Some of the behaviours they



exhibited were littering of open spaces in the market, sweeping and heaping it close to the goods that they were selling and dumping of solid waste in open drains. The difficulty of these traders in allowing education to change their attitude towards sanitation has made unclean environment (where they trade) a normal syndrome in their daily lives. Most of the traders were either Christians or Moslems but their attitudes towards poor sanitation completely contradicted the teachings of the Bible and the Qur'an, the two Holy Books, which teach us that cleanliness is next to Godliness. This means that they were not practicing what they were taught to do by the Holy Books. The lack of effort by Ghanaians to inculcate the habit of making their environment clean, was exhibited by the traders in the market. The traders were ignorant about the deadly consequences of selling under unhygienic conditions although they all agreed to have knowledge about it.

Although the study points to the fact that traders did have positive attitudes towards environmental sanitation in the market but exhibited negative behaviours, some of the factors that influenced this negative behaviours could be attributed to the failure of service providers to live up to expectation. The Hohoe Municipal Assembly, which is mandated to initiate total development projects and programmes in the entire Municipality, including sanitation, had not lived up to expectation. The Assembly tried to put measures in place to maintain good sanitation at the market by contracting Zoomlion to sweep the streets and drains around the market, engaged the labourers of the Environmental Health and Sanitation Department to clean the market daily, educate traders and the entire public on the importance of clean environment and also enacted sanitation bye-laws to compel people maintain clean and hygienic environment. The theory of planned behaviour explains the environmental attitudes of the traders. There were indications that most of the traders were willing to keep the market clean by

making some efforts of either engaging errand boys or they themselves sweeping the market before trading activities commence each day.

However, the non-motivational factors such as the support systems that would have made the traders perform the needed behaviour were absent. They failed to provide litter bins at vantage positions in the market for both traders and customers to use in order to reduce the amount of waste. Due to inadequate resources, the Assembly is not able to employ more labourers to clean the market and also supervise waste management situations in the market; the only big open drain has never been cleaned and the stench coming from it is unbearable yet people sell close to it. To make situations worse, the Assembly could not protect the market thereby encouraging unscrupulous individuals to dump garbage and defecate in the night into the litter bins and open spaces forcing Zoomlion to collect all the litter bins from the market and the lorry park. Zoomlion was also contracted to clean the big drain in the market regularly but this contract was abrogated with the reason that the labourers in the Environmental Health and Sanitation Department would take up that responsibility. But this could not materialize because the labourers have totally failed to do the cleaning, which resulted in an unbearable stench coming from the drain. For instance, throughout the period that this study was carried out, the labourers had never cleaned the big drain in the market (although it was filled with solid waste), not even during the national clean-up exercises organised on the 27<sup>th</sup> of October, 2014, which was sanctioned by President John Dramani Mahama.

It is good to make a law to guide society, but whether or not the law will work is highly dependent on the degree or level to which an enforcement will occur inclined to the law passed. Very good sanitation bye-laws have been made by the Hohoe Municipal

Assembly under the jurisdiction of the Ministry of Local Government to ensure sanitary conditions in the Municipality, including the Hohoe main market but the traders have been more than good at ignoring these laws according to their whims and caprices. In order to promote clean environment in the market, the laws provide that every trader should clean and keep his or her surrounding free from filth. It also makes it mandatory for food items to be sold under hygienic conditions to consumers in order to prevent the outbreak of diseases. In order to ensure compliance, the Environmental Health Department employed personnel to regularly inspect the sanitation situations in the market. However, these laws were not being enforced to the latter, a situation that promoted insanitary conditions in the market thereby encouraging traders to litter their surroundings with impunity.

The inability to protect the market from intruders is another lapse on the part of the Assembly. This has resulted in the insanitary conditions in the market due to the manner by which people defecate and dump refuse there at night. The Assembly also failed to lay pavement blocks on the walkways thereby making the market a no-go area during the rainy season. Serious insanitary conditions arise during this period; mosquitoes, flies and other disease causing bacteria breed rapidly because of the humid conditions. As a result of the Assembly not being able to fulfill its obligatory responsibilities, the traders' attitudes towards sanitation were negatively influenced. They seemed to be disappointed and fed up with the strategies that the Assembly was adopting to manage waste at the market place. But because of diversity in the range of goods sold in the market (the uniqueness of a typical Ghanaian market), more than ever before, a critical need exists for all traders to be prepared to address the sanitation needs of every trader in the market.

### 6.3. Recommendations

From the findings of the study, it is important that the Hohoe Municipal Assembly commit itself to the issue of environmental sanitation in the Hohoe Township in general and the markets in particular. This is because if environmental sanitation is not properly managed, it can pose serious health risks to the citizenry. For instance, solid waste blocking storm drains and littering of open spaces at market places facilitate the growth of diseases causing pathogens. The Central Government should therefore, as a matter of urgency, improve the capacity of the Assembly through the provision of finance, logistics and personnel. Informal education should be intensified at the market level in collaboration with Zoomlion and Information Services Department. The budgetary allocation for sanitation should be increased if members of the Municipal Assembly, for that matter Government, have learnt any lessons from the recent nationwide cholera outbreak which killed hundreds of people across the country.

The Assembly must also promote strict enforcement of the sanitation bye-laws through collaboration with the Ghana Police Service to specifically dedicate a unit (of the police service) to issues concerning sanitation. This unit should be given the power by law to arrest anyone that acts in a way that will jeopardize the clean nature of the market. Perpetrators should be jailed or fined huge amounts to serve as a deterrent to the potential filthy people whose conscience will not tell them that selling, especially food, in an insanitary environment can lead to outbreak of diseases and eventually, death of people.

The Assembly must also play its roles effectively by providing litter bins at vantage positions in the market so that traders and customers are not compelled to litter open spaces due to the long distance that they have to walk to the communal dumpsite. If the

cleaning of the drains would not be given back to Zoomlion, then the Assembly must make sure its labourers clean them, especially the big one, regularly. The entire market should be paved with cement blocks to reduce the amount of dust during the dry season and amount of mud during the rainy season because these can result in food contamination for those who patronize the market. The Assembly, as a matter of urgency, should establish a management committee to see to the maintenance of sound sanitation practices at the market.

If the above mentioned recommendations are implemented by the Assembly without the market being fenced, then the objectives for implementing them would not be achieved. Therefore, the final recommendation is that the Assembly should secure the market through fencing and fixing of gates to prevent intruders from getting access to it in the night. This will prevent people from bringing garbage from their homes to dump in the litter bins and again, prevent defecating in the open spaces and into litter bins. Traders could be made to pay special levies towards these projects if they are educated on the benefits of such programmes to them (traders) and the Assembly also shows its commitment to sustaining it through effective and efficient implementation.

#### **6.4. Limitations of the study**

There are some limitations to this study. The first limitation is the sample size. The study examined the attitudes of 25 traders at a large market in Hohoe in the Volta Region. Although the sample size was appropriate for the study, it is possible that it may not be a true reflection of the attitudes of majority of the traders towards poor sanitation at the market. While this number of in-depth interviews provides a generous data source, it did not permit generalization to the large population because it is a relatively small number. The respondents did not represent the diversity that is found in

most markets. Having said this, my objective was to understand the attitudes of a specific group of traders towards poor sanitation at their business environment.

Another limitation was that the period used for the collection of data was longer than anticipated because of interferences from customers who were buying goods from the respondents and background noises from other traders and their customers. I therefore rescheduled the interactions with those who were residing in the Hohoe town. But I had no choice than to interview the visiting respondents in the noise and this affected the data because there were some interferences in the recordings as a result of the background noise.

Although a complete transcript of all questions of the interviewer and all observations might be most useful for the study, there was limited time to go through all the detail information for analysis. The detailed case- by- case analysis of individual transcripts in a qualitative research takes a long time, and the aim of the study was to say something detail about the attitudes and behaviours of this particular group of traders. Transcribing of the data from Ewe and Twi to English was also very cumbersome and time consuming as some of the words were difficult to interpret.

### **6.5. Implications for further research**

This study examined the attitudes of traders towards environmental sanitation in the Hohoe main market. In the course of the study, however, a number of themes have been identified as having affected the organization of waste management and sanitation but which remain under researched. These areas include resourcing of the Assembly to effectively implement its programmes, waste management programmes and enforcing of the sanitation bye-laws. Research in these areas is therefore recommended to create

greater understanding of the general environmental sanitation situation in the Hohoe Municipality.



## REFERENCES

- Abidin, Z., Ibrahim, R., & Akia, S. (2011). *Attitudes (part1)*. Retrieved: 13/11/2014. Website: [eprints.utm.my/19940/1/001.pdf](http://eprints.utm.my/19940/1/001.pdf)
- Adams, D. A. (2003). Lifelong learning skills and attributes: The perceptions of Australian secondary school teachers. *Issues in Educational Research, Vol. 17, 2007*. Retrieved: 12/03/14. Website: [www.iier.org.au/iier17/adams.html](http://www.iier.org.au/iier17/adams.html)
- Adedipe N. O. *et al.* (2005). Waste management, processing, and detoxification. In: CHOPRA, K. *et al.* (Ed.) *Millennium Ecosystems Assessment. Ecosystems and Human Well-Being: Policy Responses: findings of the Responses Working Group*. Washington, DC: Island Press, 2005. v.3, P.313-314
- Adedokun, A. (2014). Planning challenges of space conciliation for urban planners: The example of the urban node of Yaba, Lagos Metropolis. *Journal of Environmental and Earth Science vol. 4 No 17 (2014)*. Retrieved: 13/11/14. Website: [www.iiste.org/Journals/index.php/JEES/article/view/15898](http://www.iiste.org/Journals/index.php/JEES/article/view/15898).
- Acheampong, P. T. (2010). *Environmental sanitation management in the Kumasi Metropolitan area*. (Unpublished). Retrieved: 15/12/13. Website: [www.dspace.knust.edu.gh:8080/xmlui/handle/123456789/173](http://www.dspace.knust.edu.gh:8080/xmlui/handle/123456789/173)
- African Development Bank (ADB). (2002). *Study on solid waste management options for Africa*. Retrieved: 12/03/14  
[http://www.sswm.info/sites/default/files/reference\\_attachments/AFRICAN%200...](http://www.sswm.info/sites/default/files/reference_attachments/AFRICAN%200...)
- Agwu, M. O. (2012). Issues and challenges of solid waste management practices in Port Harcourt City, Nigeria-a behaviour perspective. *American Journal of Social and Management Sciences*. Retrieved: 12/03/14  
<http://www.scribd.com/document/1052734602/AJSMS-3-2-83-92.pdf>.
- Agbola, T. (1991). *The mobilization of finance and credit for rural housing improvement and development in Nigeria*. J. International Development
- Ajzen, I. (1991). *The theory of planned behaviour*. Retrieved: 26/01/13. Website: [cas.hse.ru/.../Oct%2019%20Cited%20%231%20Manage%20THE%20TH](http://cas.hse.ru/.../Oct%2019%20Cited%20%231%20Manage%20THE%20TH)
- Alonso, A., Costa, V. & Maciel, D. (2010). *Environmental activism in Brazil: The rise of a social movement*. Retrieved: 12/03/14. Website: [http://www.drc-citizenship.org/system/assets/1052734602/original/1052734602-alonso\\_etal.201...](http://www.drc-citizenship.org/system/assets/1052734602/original/1052734602-alonso_etal.201...)
- American Meteorological Society, (2007). *Air pollution Control Act of 1955, United States*. Retrieved: 26/11/13. Website: [www.eoearth.org/view/article/149927](http://www.eoearth.org/view/article/149927)



- Andersson, J. & Slunge, D. (2005). Tanzania – Environmental Policy Brief. *Tanzania – Environmental Policy Brief*. Development Partners Group Tanzania. Retrieved: 12/02/13. <http://www.sidaenvironmenthelpdesk.se/.../06/Env-Policy-Brief-Tanzania->
- Andrade, L.H., Motta, G.E. & Amaral, M.C.S. (2013). Treatment of dairy wastewater I with a membrane bioreactor. *Brazilian Journal of Chemical Engineering*. Vol. 30, No 04, pp.759-770. October- December 2013.
- Anija-Obi, F., Eneji, C.V.O., & Ubom, B.A.E. (2013). *Environmental education for public awareness*. Retrieved: 12/12/14. Web. [www.academicjournals.org/.../article1379687783\\_Anija-Obi%20et520...](http://www.academicjournals.org/.../article1379687783_Anija-Obi%20et520...)
- Anomanyo, E. D. (2004). *Integration of municipal solid waste management in Accra (Ghana): Bioreactor treatment technology as an integral part of the management process*. Retrieved: 12/02/12. Website: [www.lumes.lu.se/database/Alumni/03.04/theses/anomanyo\\_edward.pdf](http://www.lumes.lu.se/database/Alumni/03.04/theses/anomanyo_edward.pdf)
- Arbuthnot, J. & Lingg, S. (1975). A comparison of French and American environmental behaviour, knowledge and attitudes. *International Journal of Psychology*, 10, 275-281.
- Arcury, T.A. & Christianson, E.H. (1990). *Environmental worldview in response to environmental problems*. Kentucky 1984 and 1985 compared. *Environment and Behavior*, 22(3), 387-407.
- Baabereyir, A. (2009). *Urban environmental problems in Ghana: A case study of social environmental injustice in solid waste management in Accra and Secondi-Takoradi*. Thesis submitted to the University of Nottingham. Retrieved: 12/02/2014. Website: <http://www.eprints.nottingham.ac.uk/10847>
- Bandara, N.J.G.J., Hettiaratchi, J.P.A., Wirasinghe, S.C. and Pilapiiya, S. (2007). Relation of waste generation and composition to socio-economic factors: A case study. *Environmental Monitoring Assessment* 135: 31-39.
- Baron, R.A. & Byrne, D. (1987). *Social Psychology: Understanding human interaction* (5<sup>th</sup> ed). Boston: Allyn & Bacon.
- Baxter, P. & Jack, S. (2008). Qualitative case study methodology: study design and implementation for novice researchers. *The Qualitative Report Volume* 13 (4): 544-559. Retrieved: 3/2/14. Website: <http://www.nova.edu/ssss/QR/QR13-4/baxter.pdf>
- Bell, A.P., Greene, T.C., Fisher, J.D. & Baum, A. (2001). *Environmental psychology*. Retrieved: 21/02/12. Website: [www.teachgreenpsych.co/environmental-psychology.php](http://www.teachgreenpsych.co/environmental-psychology.php).
- Bentil, N. L. (2007, Nov. 13<sup>th</sup>). Sanitation deteriorates at Agbogbloshie. *Daily Graphic*. Retrieved: 05/07/2013. Website: [bentil.blogspot.com/2007/11/sanitation-at-Agbogbloshie](http://bentil.blogspot.com/2007/11/sanitation-at-Agbogbloshie)

- Blaikie, N. (2000). *Designing social research*, (1<sup>st</sup> ed). Polity press, Cambridge
- Blaum, A. (1987). *Knowledge, of and attitudes towards population growth and the environment: university students in Costa Rica and the United States*.  
Retrieved: 12/03/14. Website:  
[alyxia.umd.edu/teaching/files/Holl\\_1999.pdf](http://alyxia.umd.edu/teaching/files/Holl_1999.pdf)
- Blocker, T.J. & Eckberg, D.L. (1975). *Gender and environmental risk concerns*.  
Retrieved: 15/10/14. Website: [eab.sagepub.com/content/24/5/602.refs](http://eab.sagepub.com/content/24/5/602.refs)
- Boarnet, M. & Crane, R. (2001). The influence of land use on travel behaviour. Specification and estimation strategies. *Transport Research Part A Policy and Practice*, 35(9) 823-845.
- Bogdan, R. C., & Biklen, S. K. (1982). *Qualitative research for education: An introduction to theory and methods*. Boston: Allyn and Bacon, Inc.
- Bogner, J. M. (2007). Waste management in climate change. Retrieved: 12/09/2013.  
Website: <http://www.ipcc.ch/pdf/assessment-report/ar4/wg/ar4-wg3chapter10pdf>.
- Bord, R.J. & O'Connor R.E. (1997). The gender gap in environmental attitudes: the case of perceived vulnerability to risk. *Journal of Social Science Quarterly*, Vol.78, 830-840
- Business Dictionary, (1998). Retrieved: 23/04/15. Website:  
[www.businessdictionary.com/definition/market.html](http://www.businessdictionary.com/definition/market.html)
- Buss, R. (2007). United Nations Conference on the Human Environment (UNCHE), Stockholm, Sweden. Retrieved: 11/02/13. Website:  
<http://www.eoearth.org/view/article/156774>
- Buttel, F.H. & Flinn, W.L. (1978b). The social bases of environmental concern: a review of hypotheses, explanations and empirical evidence. *Oxford Journal, Social Sciences, Public Opinion Quarterly*, Vol. 44, Issue 2, pp. 181-197  
Retrieved: 12/03/14. Website: [poq.oxfordjournals.org/content/44/2/181.full.pdf](http://poq.oxfordjournals.org/content/44/2/181.full.pdf)
- Carson, D., Gilmore, A., Perry, C., & Gronhaug, K. (2001). *Qualitative marketing research*, Sage publications, London.
- Chazan, D. (2002). *A world drowning in litter*, BBC. Retrieved: 24/05/14. Website:  
<http://news.bbc.co.uk/2/hi/Europe/1849302>.
- Chukwuma, C. S. (1998). Environmental issues and our chemical world – the need for a multidimensional approach in environmental safety, health and management. *Environmental management and Health* Vol.9 No.3, pp.136-143. Retrieved: 21/02/14 [directory.umm.ac.id/Data%20Elmu/jurnal/E/Environmental%20...](http://directory.umm.ac.id/Data%20Elmu/jurnal/E/Environmental%20...)

- Commission on Sustainable Development, (2010). *18<sup>th</sup> Session of the United Nations Commission on Sustainable Development: National report for Ghana*. Retrieved: 28/09/2013. Website: [www.un.org/.../NationalReports/ghana/Anku\\_SCD\\_Waste](http://www.un.org/.../NationalReports/ghana/Anku_SCD_Waste)
- Craffert, L. & Willers, V. (1994). *Public perceptions of environmental issues*. Retrieved: 12/12/13. Website: [datad.aau.org/bitstream/handle/10500/1779/08bibliography.pdf?...](http://datad.aau.org/bitstream/handle/10500/1779/08bibliography.pdf?...)
- Creswell, J. W. (1998). *Qualitative inquiry and research design: Choosing among five traditions*. Retrieved: 12/02/2014. Website: [www.keithrkenney.file.wordpress.com/2012/02/creswellcritique.pdf](http://www.keithrkenney.file.wordpress.com/2012/02/creswellcritique.pdf).
- Cunningham, W. P., & Saigo, B. W. (1999). *Environmental Science: A Global Concern* (7th ed.). New York: McGraw Hill. Environmental News Service, ENS
- Dacko, S. G. (2008). *The advance dictionary of marketing*. Retrieved: 12/02/12. Website: [www.ISBN 0-19-928600-0](http://www.ISBN 0-19-928600-0).
- De Mello, M. C. (1998). The Cubatao pollution project: popular participation and public accountability. *The Journal of Environment & Development*. Vol. 7 No 1 60-76. Retrieved: 11/02/13. Website: <http://www.jed.sagepub.com/lookup/doi/10.1177/107049659800700105>
- Doran, P. (2002). An assessment of the world summit on sustainable development. *International Institute for Development Briefing Paper*, October 3, 2002. Retrieved: 12/06/14, Website: [www.academia.edu/856715/An assessment of the World Summit on...](http://www.academia.edu/856715/An_assessment_of_the_World_Summit_on...)
- Dzotsi, E.K. (2014). *Addressing the cholera epidemic*. Retrieved: 12/04/15. Website: [www.washghana.net/.../Cholera%20Update Paliament%20%200309201...](http://www.washghana.net/.../Cholera%20Update_Paliament%20%200309201...)
- Edmundson, A.R. (1981). *Refuse management in Kumasi, Ghana*. Land research centre, UST, Kumasi, Ghana.
- Ekpenyong, C.E. (2012). *Distance Education Environmental Management*. Retrieved: 13/03/2014. Website: [www.academia.edu/.../WOMEN\\_AND\\_ENVIRONMENT...](http://www.academia.edu/.../WOMEN_AND_ENVIRONMENT...)
- Environmental Protection Agency, (2009). *Legal and Policy Framework -2.1*. Retrieved: 12/03/2014. Website: <https://www.tulloil.com./.../ghana.../jubilee-field-eia-chapter-2...>
- Fiedeldey, A. C. (1998). *Human values, attitudes and perceptions of the environment: The South African PAGEC study*. Pretoria: Human Sciences Research Council.

- Franzen, A. (2003). Environmental attitudes in international comparison: An analysis of the ISSP Survey 1993 and 2000. *Social Science Quarterly*. Vol. 84, No. 2, pp293-308. Retrieved: 28/01/14. <http://www.onlinelibrary.wiley.com> >...> vol. 84 Issue 2.
- Franson, N., & Garling, T. (1999). Environmental concern. Conceptual definitions, measurement methods and research findings. *Journal of Environmental Psychology*, 19, 369-382
- Fredua, G. (2007). Problems of solid waste management in Nima, Accra. *Undergraduate Research Journal for the Human Science*, vol. 6-2007. Retrieved: 13/04/14 <http://www.org/urc/v6/george.html>.
- Gbekor, A. (2003), "Domestic Waste Management", Ghana Environmental Protection Agency (EPA) Newsletter, Vol. 47 No. 5. Ghana EPA, Accra.
- Ghana News Agency, (2013). Markets in Central, Western Regions face sanitation challenges. *News report Tuesday, 5<sup>th</sup> February, 2013*. Retrieved: [www.ghananewsagency.org/.../markets-in-central-and-western-regions-face...](http://www.ghananewsagency.org/.../markets-in-central-and-western-regions-face...) 23/06/2014
- Gordon, E. L. (2012). *History of the modern environmental movement in America*. Retrieved: 13/06/14 Website: [photos.state.gov/libraries/Mumbai/498320/fernandesma/June\\_2012\\_001.pdf](http://photos.state.gov/libraries/Mumbai/498320/fernandesma/June_2012_001.pdf).
- Grieve, K. W., & Staden F.J. (1985). *Environmental concern in South Africa: An attitudinal study*. Retrieved: 30/04/14. Website: [sap.sagepub.com/content/15/4/135.refs](http://sap.sagepub.com/content/15/4/135.refs)
- Grossman, G.M. (1995). *Pollution and growth: what do we know? The Economics of Sustainable Development*, Cambridge University Press.
- Hardoy, J.E., Milutin, D. & Satterthwaite, D. (2001). *Environmental problems in an urbanizing world: finding solutions for cities in Africa, Asia and Latin America*, Earthscan Publication Ltd, London.
- Hershey, M.R. & Hill, D.R. (1977). Is pollution a "white thing"? Racial differences in pre-adults' attitudes. *Journal of Public Opinion Quarterly*, Vol. 41, 419-458
- Hina, Z. & Devadas V. (2007). Municipal solid waste management in Kanpur, India: obstacles and prospects. *Management of Environmental quality: An International Journal*, 18 (1), 89-108.
- Hoorweg, D., Lam, P. & Chaudhry, M. (2005). Waste management in China. Retrieved: 04/10/14. Website: <http://www.docstoc.com/docs/19960465/Municipal-Solid-Waste-Management-in-China>.

- Ijaiya, H. (2013). The legal framework for solid waste disposal and management in Kwara State, Nigeria. *Journal of Environmental Protection*, 2013, 4, 1240-1244.
- Islam, T. (2012). *Residential childcare: The experiences of young people in Bangladesh*. Retrieved: 12/09/13. Website: [www.childrenwebmag.com/articles/international-child-care/...](http://www.childrenwebmag.com/articles/international-child-care/)
- Jatau, A.A. (2013). Knowledge, attitudes and practices associated with waste management in Jos South Metropolis, Plateau State. Retrieved: 09/11/14. Website: [www.mcser.org/journal/index.php/mjss/article/view/667](http://www.mcser.org/journal/index.php/mjss/article/view/667)
- Jessen, M. (2003). *Discarding the idea of waste: the need for a zero waste service*. Retrieved: 12/03/14. Website: [www.zerowaste.ca/Discarding%20the%20Idea/20%of20Waste%\(Sept03\).pdf](http://www.zerowaste.ca/Discarding%20the%20Idea/20%of20Waste%(Sept03).pdf)
- Karan P. P. (1994). Environmental movement in India. *The Geographical Review*: vol. 84. Issue: 1 January 1994. pp 32 – 41. American Geographical Society. Retrieved: 20/02/14. Website: <http://www.questia.com/.../environmental-movements-in-india>.
- Kaseva, M. E. & Mbuligwe, S. E. (2005). *Appraisal of solid waste collection following private sector involvement in Dar es Salaam city*. Retrieved: 12/11/13. Website: [www.sciepub.com/reference/84442](http://www.sciepub.com/reference/84442)
- Lardinois, I. & Klundert, A.V.D. (1995). Plastic waste: option for small-scale resource recovery. Retrieved: 15/02/14. Website: <https://books.google.com/books?isbn=0798304235>
- Loundsbury, J. W. & Tornatzky, I.G. (1977). A scale for assessing attitudes towards environmental quality. *Journal Social Psychology*, 101:299-305
- Lyons, E. & Breakwell, G. (1994). Factors predicting environmental concern and indifference in 13-16 years old. Retrieved: 12/03/14. Website: [eab.sagepub.com/content/26/2/223.short](http://eab.sagepub.com/content/26/2/223.short)
- Meena, M. S., Kumar, A., Singh, K. M., and Meena, H. R., (2009). Farmers' attitudes towards post-harvest issues of horticulture crops. *Indian Res. J. Ext. Edu.* 9(3), September, 2009: 1-19. Retrieved: 23/11/12. Website: <http://www.seea.org.in/vo19-3-2009/04.pdf>
- NAAEE, (1996). *Environmental education materials: guidelines for excellence*. Washington, DC: North American Association for Environmental Education.
- Nze, F. C. (1978). Managing urban waste in Nigeria for social and economic development. *Journal of Management Studies*, Lagos, vol 5, Nigeria.
- Odotei, I. (1995). *The history of Ga during the gold and slave trade eras*.



- Okot-Okumu, J., & Nyenje, R., (2011). "Municipal solid waste management under decentralisation Okot in Uganda." *Habitat International* 35, pp. 537-543.
- Okot-Okumu, J. (2008). *Solid waste Management in Uganda: Issues Challenges and Opportunities*. PROVIDE programme Workshop. The Netherlands
- Oladimeji, I. M., Annune, P.A & Ebele, S.O (2011). *Appraisal of environmental sanitation on...* Retrieved: 11/02/14. Website: [www.academia.edu/7409954/APRAISAL\\_OF\\_ENVIRONMENTAL\\_SANITATION\\_ON](http://www.academia.edu/7409954/APRAISAL_OF_ENVIRONMENTAL_SANITATION_ON)
- Olgyaiova, K., Pongracz, E., Mikkola, T., Radoslav S. R. & Keiski, R. L. (2005). Attitudes towards waste minimisation in Finland and Czech Republic- Barriers and drivers. Oulu University Press, Oulu. Pp. 86-108.
- Onibokun, A.G, & Kumuyi, A.J. (1999). *Urban poverty in Nigeria: Towards sustainable strategies for its alleviation*. Centre for African Settlement Studies and Development, Ibadan.
- Pacey, A., (1990). *Technology in World Civilization*. MIT Press, Cambridge.
- Padgett, D. K. (1998). *Qualitative methods in social work research: Challenges and rewards*. Thousand Oaks, CA: Sage Publications, Inc.
- Palczynski, R. J. (2002). *Study on solid waste management options for Africa*. The African Development Bank PSDU.
- Palmer, P. (2004). *Getting to zero waste*. Oakland, CA: Purple Sky Press,
- Passarini, F.; Vassura, I.; Monti, F; Morselli, L; & Villani, B., (2011). *Indicators of waste management efficiency related to different territorial Conditions*. Waste management: 32 pp. 785-792.
- Pickens, J. (2005). Attitudes and perceptions of people- leadership and management. Retrieved: 03/06/13. Website: [healthadmin.jbpub.com/borkowski/chapter3.pdf](http://healthadmin.jbpub.com/borkowski/chapter3.pdf)
- Plug, C., Meyer, W. F., Louw, D. A. & Gouws, L. A. (1986). *Psigologiewoordeboek*: Retrieved: 21/06/2012. Website: [apps.ufs.ac.za/dl/staff/0063313/cv.pdf](http://apps.ufs.ac.za/dl/staff/0063313/cv.pdf)
- Ragin, C. C. (1994). *Constructing Social Research: The Unity and Diversity of Method*. London: Pine Forge Press.
- Reynolds, E.P. (1992). *Attitudes and environmental concern*. Retrieved: 12/12/13. Website: [uir.unisa.ac.za/bitstream/handle/10500/1779/02chapter.pdf](http://uir.unisa.ac.za/bitstream/handle/10500/1779/02chapter.pdf)
- Roth, R. E. & Perez, J. (1989). *Twelfth grade student knowledge and attitudes towards the environment in the Dominican Republic*. Retrieved: 12/12/13. Website: [www.lifesciencesite.com/ljsj/life0902/171\\_964life0902\\_1149\\_1154.pdf](http://www.lifesciencesite.com/ljsj/life0902/171_964life0902_1149_1154.pdf)

- Rotich, H. K.; Yongsheng, Z; & Jun, D. (2006). *Municipal solid waste management challenges in developing countries: Kenyan case study*. Waste Management 26 (1), 92-100 Sanitation Country Profile Ghana, (2004). *Sanitation report on Ghana*. Retrieved: 12/10/2014. Website: [www.un.org/esa/.../ghana/SanitationGHANA04F.pdf](http://www.un.org/esa/.../ghana/SanitationGHANA04F.pdf)
- Schahn, J. & Holzer, E. (1990). *Studies of individual environmental concern: the role of knowledge, gender and background variables*. Retrieved: 13/10/14. Website: [eab.sagepub.com/content/22/6/767.abstract](http://eab.sagepub.com/content/22/6/767.abstract)
- Scheinberg, A., M. Muller, and E. Tasheva. (2011). Assessing Recycling in Low-and middle-income Countries: building on modernised mixtures. *Habitat International* 35 (2) pp. 100198.
- Schertenleib, L., Forster, D. & Belevi, H. (2002). *An integrated approach to environmental sanitation and urban agriculture*. Retrieved: 13/10/13. Website: [www.eawag.ch/forschung/sandec/publikationen/wra/dl/integ\\_appr\\_to...](http://www.eawag.ch/forschung/sandec/publikationen/wra/dl/integ_appr_to...)
- Schimidt, J.E. (2007). *From intensions to actions: The role of environmental awareness on college students*.
- Scott, D. & Willits, F.K. (1994). *Environmental attitudes and behaviour*. Retrieved: 12/12/14. Website: [eab.sagepub.com/content/26/2/239.abstract](http://eab.sagepub.com/content/26/2/239.abstract)
- Secord, P.F. & Backman, C.W. (1969). *Social Psychology*. McGraw Hill, New York
- Sengupta, M., Das, J. & Maji R.K. (2010). Environmental Awareness and Environmental Related Behaviour Students in Kolkata: Effects of Stream and Gender. *Anwesa*, Vol. 5, No. 1-8.
- Shore, T. H., Tashchian, A. & Adams, S. J. (2000). Development and validation of a scale measuring attitudes toward smoking. *The Journal of Social Psychology*, 2000, 140(5), 615-623. Retrieved: 21/02/12. Website:<http://dx.doi.org/10.1080/00224540009600501>
- Soklaridis, S. (2009). The process of conducting qualitative grounded theory research for a doctoral thesis: experiences and reflections. *The Qualitative Report* 14(4), 719-734.
- Solomon, A.O. (2001). The role of households in solid waste management in East Africa capital cities. Retrieved: 11/03/14. Website: <https://books.google.com.gh/books?id=fimfAQAAAJ>
- Sood, D. (2004). *Solid waste management study for Freetown, Sierra Leone. Component Design for the World Bank, Draft Report Project No. P078389*, the Government of Sierra Leone, Freetown, Sierra Leone, February 2004.
- Sriramachari, S. (2004). The Bhopal gas tragedy: An environmental disaster. *Current Science*: Vol. 86 No. 7, April, 2004, pp 905- 919. Retrieved: 14/06/14. Website: [www.icmr.nic.in/final/bhopal\\_gas.pdf](http://www.icmr.nic.in/final/bhopal_gas.pdf).

- Staats, H. & Wilke, H.A.M. (2007). *Situational and personality factor as direct or personal norm mediated predictors of pro-environmental behaviour: questions derived from norm-activation theory*. Retrieved:  
[psychologywiki.com/.../Norm\\_Mediated\\_Predictors\\_of\\_Pro-environmen...](http://psychologywiki.com/.../Norm_Mediated_Predictors_of_Pro-environmen...)
- Stern, P.C. & Dietz, T. (1994). The value basis of environmental concern. *Journal of Social Issues, Vol. 50, no.3, pp. 65-84*. Retrieved: 12/12/14 Website:  
[onlinelibrary.wiley.com>...>vol 50 Issue 3](http://onlinelibrary.wiley.com...>vol 50 Issue 3)
- Supriyadi, S., Kriwoken, L.K., & Birley, I., 2000. *Solid waste management solutions for Semarang, Indonesia*. *Waste Manage Res* 18: 557-566
- Taylor, D. A. (1989). *Cultural diversity CEUs, cross cultural counseling*. Retrieved: 21/06/14. Website:  
[www.getceusnow.com/portal/file/culturalcompetencyanddiversity.htm](http://www.getceusnow.com/portal/file/culturalcompetencyanddiversity.htm)
- Taylor, S.J. & Bogdan, R. (1998). *Introduction to qualitative research methods: a guidebook and resource* (3rd ed). New York: John Wiley & Sons Inc.
- Thompson, S.C.G. & Barton, M.A. (1994). *Ecocentric and anthropocentric attitudes towards the environment*. Retrieved: 12/12/14. Website:  
[digitalcommons.usu.edu>...>UNF>UNF\\_RESEARCH>41](http://digitalcommons.usu.edu...>UNF>UNF_RESEARCH>41)
- Tongco, D.C. (2007). *Purposive sampling as a tool for informant selection*. Retrieved: 13/04/14. Website: [www.sfu.ca/~palys/Purposive%20sampling.pdf](http://www.sfu.ca/~palys/Purposive%20sampling.pdf).
- United Nations, (2009). *Challenges to human security in Arab country*. Retrieved: 23/03/2015. Website: [www.arab-hdr.org/publications/other/ahdr/ahdr2009e.pdf](http://www.arab-hdr.org/publications/other/ahdr/ahdr2009e.pdf)
- United Nations, (2002). *Ghana Country Profile 2002*. Retrieved: 12/10/2014. Website: [www.un.org/esa/agenda21/natlinfo/wssd/ghana.pdf](http://www.un.org/esa/agenda21/natlinfo/wssd/ghana.pdf)
- United Nations, (1998). *Human Development Report 1998*. Retrieved: 23/03/2015. Website: [hdr.undp.org/.../reports/...hdr](http://hdr.undp.org/.../reports/...hdr)
- United Nations Environmental Programme, (2012). *Public awareness and environmental education*. Retrieved: 12/03/14. Website:  
[www.unitedcharishorganization.org/.../environmental-awareness/](http://www.unitedcharishorganization.org/.../environmental-awareness/)
- Vaughan, G.M. & Hogg, M.A. (1995). *Social Psychology*. Retrieved: 14/03/2014. Website: <https://craigsdissertation.wordpress.com/.../socila-psychology-hogg-and->
- Vikola, M. & Nikolaou, I. (2005). *Attitudes towards organizational change: What is the employees' stress and commitment?* Retrieved: 23/09/2013. Website: [www.emeraldinsight.com/.../0142545051057...](http://www.emeraldinsight.com/.../0142545051057...)



- Water and Sanitation Programme, (2012). *Progress on drinking water and sanitation 2012- Unicef*. Retrieved: 12/10/14. Website: [www.unicef.org/media/files/JMPreport2012.pdf](http://www.unicef.org/media/files/JMPreport2012.pdf)
- Water Supply and Collaborative Council, (2010). *Towards a water secure world*. Retrieved: 12/03/14. Website [www.org/en/OUR-approach/.../WSSCC/](http://www.org/en/OUR-approach/.../WSSCC/)
- Wertz, K.L. (1976). Economic factors influencing households' production of refuse. *Journal of Environmental Economics and Management* 2:263-272.
- Williams, S.M. & McCrorie, R. (1989). The analysis of ecological attitudes in town and country. *Journal of Environmental Management*, 31, 157-162.
- Willers, V.A. (1996). Environmental concern in South Africa. Retrieved: 12/12/13. Website: [datad.aau.org/bitstream/handle/10500/1779/08bibliography.pdf](http://datad.aau.org/bitstream/handle/10500/1779/08bibliography.pdf)
- World Bank, (2002). *World Development Report 2002*. Retrieved: 23/11/2014. Website: [web.worldbank.org>Data &Research>Research>WDR](http://web.worldbank.org/Data&Research/Research/WDR). 12/06/2014
- WHO (2006). A guide to healthy for markets. *WHO Report*, 2006. Retrieved: 15/10/13. Website: [www.who.int/---/capacity/healthymarket\\_guide.pdf](http://www.who.int/---/capacity/healthymarket_guide.pdf)
- Yin, R. (2003). *Case study research*. (3<sup>rd</sup> ed.). Thousand Oaks, CA: Sage Publications Inc.
- Zurbrugg, C. (2002). Solid waste management in developing countries. SANDEC/EAWAG, Switzerland

## APPENDIX 1

### Interview guide for traders at the Hohoe main market

1. Age 18-24 [ ] 25-31 [ ] 32-38 [ ] 39-45 [ ] 46 and above [ ]
2. Gender M [ ] F [ ]
3. Marital status Married [ ] Single [ ] Divorced [ ]
4. Level of education Primary [ ] JHS [ ] Secondary [ ] Tertiary [ ]  
Others [ ]
5. Are you the owner of the goods? Yes [ ] No [ ]
6. What type of good(s) do you sell? Assorted goods [ ] Fish and vegetables [ ]  
Fish only [ ] Vegetables only [ ] Sachet water [ ]
7. How long have you been trading at this place? Less than one year  
[ ] 1-3 years [ ] 4-6 years [ ] Above 6 years [ ]
8. Where do you reside?
9. Are you happy with the sanitation situation in the market?  
Yes [ ] No [ ]
10. (a) If no, why?  
(b) If yes, why?
11. What are the major items of solid waste do you commonly generate?
12. Who are those responsible for the cleaning of the market?.....
13. How often do they clean the market?.....
14. Do you have a refuse collection service? Yes [ ] No [ ]
15. How do you dispose of waste?.....
16. How often is your waste collected by your service provider?.....
17. Do the services of the service providers meet your expectation?

Yes [ ] No [ ] Why not?.....

18. How do you dispose of liquid waste in the market?

19. Do you pay for your waste collection service? Yes [ ] No [ ]

20. If yes, why?

21. If no, will you like to pay?

22. How do you feel about dumping of solid waste in drains at the market?

23. Are there toilets and urinal in the markets?

24. If yes, how many?

25. What is the distance from your selling point to the nearest toilet and the urinal?

26. Are you satisfied with the toilet and urinal facilities in the market?

Yes [ ] No [ ]

27. (a) If yes, why?

(b) If no, why?

28. In your view, how can sanitation be improved in the market?

.....

29. Considering the current situation, what support do you think you need in order to improve sanitation in market? .....

30. From your experience and opinion, do you think sanitation in the market has an impact on your daily sales?

• Yes [ ] Explain.....

• No [ ] Why?

31. How will you describe difficulties being faced by you (traders) regarding sanitation in the market? .....

32. Can you please tell me some of the measures put in place to ensure effective sanitation in the market?.....

33. What do you think should be done to make these measures effective?.....
34. Have you observed any change in sanitation for the past three years in the market?.....
35. If yes, what do you think might be the cause?
36. How will you describe its effect on trading activities and general life in the market?
37. How do traders and customers cope with poor sanitation in the market?.....
38. Could you please describe any particular disease that has plagued the market?
39. Is there any intervention mechanism developed by traders to prevent such occurrences?
40. If yes, how is it being enforced?
41. If no, why?
42. What are some of the supports being provided by government or NGOs to improve sanitation in the market?
43. Would you be ready to pay more for the improvement of sanitation in the market?
44. (a) If yes, why?  
(b) If no, why?
45. Is there anything else you will like to share with me concerning sanitation in the market?

## APPENDIX 2

### **Interview guide for official of Hohoe Municipal Environmental Health Sanitation Department**

1. What is the scope of activities of the department in the Hohoe market?
2. Which sector or organization is responsible for the cleaning of the market?
3. How often is the market cleaned in a week?
4. How many communal waste collection sites do you have in the market?
5. Do traders pay for this service? Yes [ ] No [ ]
6. (a) If, yes, how much?
7. How many toilets do you have in the market?
8. How many urinals do you have in the market?
9. How much do traders pay for using these facilities?
10. Averagely, how many people visit these facilities a day?
11. Is the cleaning of the drains also under your jurisdiction?
12. Is there any bye-law regarding sanitation in the market?
13. Do you have special courts that deal with sanitation in the Municipality?
14. How would you describe the general attitudes of traders towards sanitation in the market?
15. What is your general assessment of the environmental sanitation conditions in the market?

### APPENDIX 3

#### Interview guide for official of Zoomlion Ghana Limited

1. What is the scope of activities of your outfit in the Hohoe market?
2. How often is the market cleaned in a week?
3. Does your office supply litter bins to traders in the market?
4. If yes, who empties them?
5. If no, why?
6. How many communal waste collection sites does your company have in the market?
7. Do you regulate the siting and maintenance of communal waste containers?
8. How often do you empty the container(s) a week?
9. How would you describe the general attitudes of traders towards sanitation in the market?
10. Does your office carry out public education on environmental sanitation in the market?
11. What is your general assessment of the environmental sanitation conditions in the market?
12. In your view, how can waste management be improved in the market?
13. Would you like to make any other comments in relation to this discussion?

**APPENDIX 4**

**OBSERVATION CHECKLIST FOR TRADERS' BEHAVIOUR**

**TOWARDS ENVIRONMENTAL CLEALINESS**

**Trader:** .....

**Date:**

.....

<b>1</b>	<b>Type of Waste -Solid waste</b>	<b>Time</b>	<b>Comment</b>
<b>A</b>	<b>Mode of Cleaning</b>		
	Sweeping		
	Picking		
<b>B</b>	<b>Means of Disposal</b>	<b>Time</b>	<b>Comment</b>
	Heaping		
	Carrying to site of disposal		
	Into litter bins		
<b>C</b>	<b>Place of Disposal</b>	<b>Time</b>	<b>Comment</b>
	Communal Dump site		
	Drains		
	Open Space		

2	Type of Waste-Liquid waste		
<b>A</b>	<b>Mean of Disposal</b>	<b>Time</b>	<b>Comment</b>
	Stored in containers  Direct flow into Drains		
<b>B</b>	<b>Place of Disposal</b>	<b>Time</b>	<b>Comment</b>
	Open Space		
	Into Drains		





APPENDIX 5

**Hohoe: Location of study area**



Source: Adapted from [www.tripadvisor.com](http://www.tripadvisor.com) 2013









